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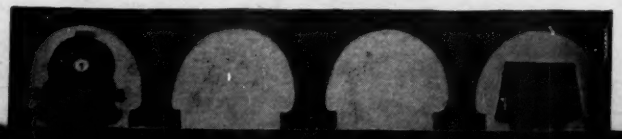

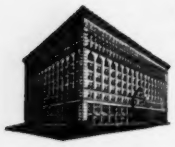

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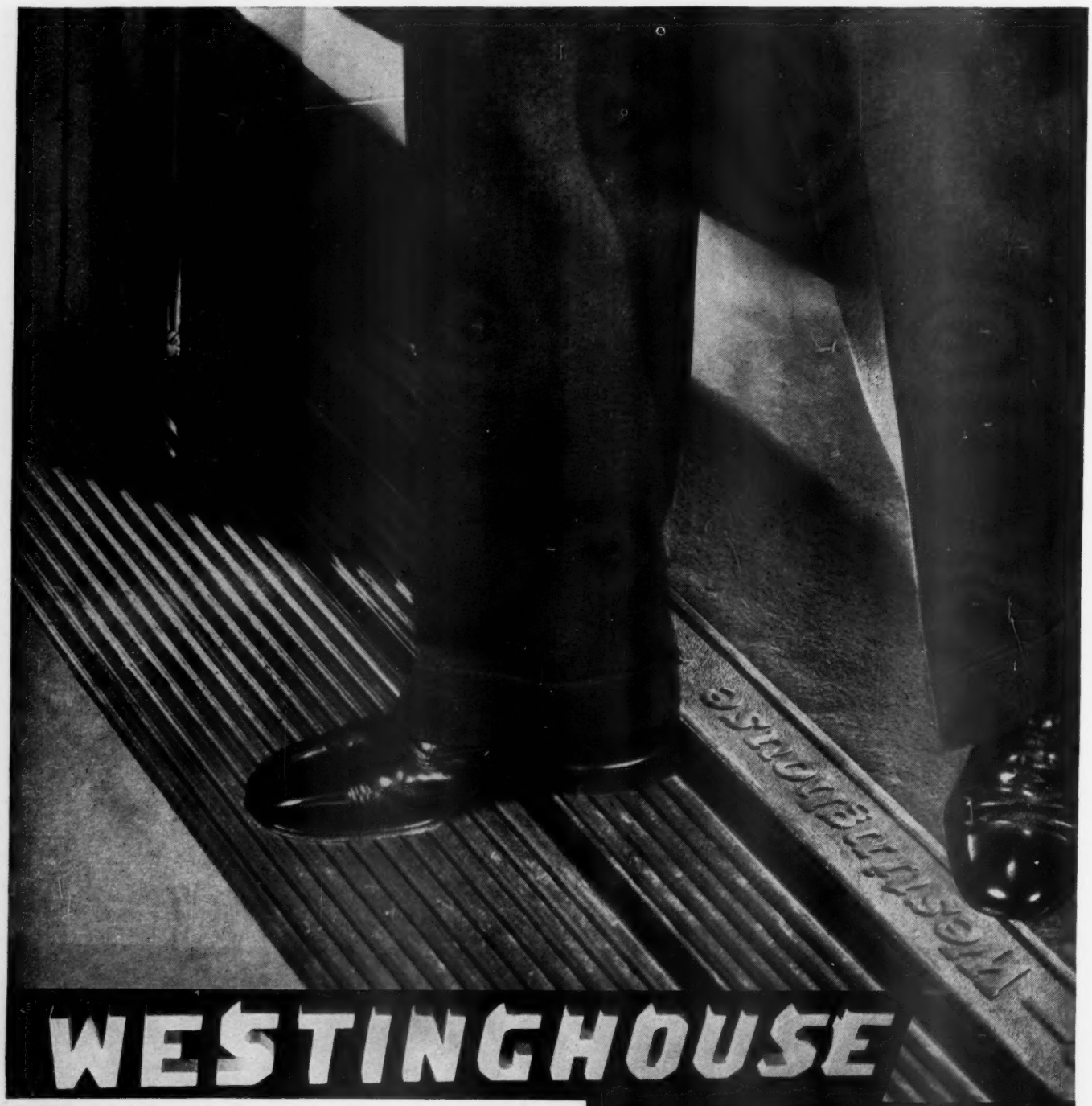

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CONTENTS

Page

Personnel of the Executive Board 2

1933—It's Significance 3

Public Versus Private Inflation 4

Whither Engineering 5
By A. A. POTTER

New Monetary System 6
By GUSTAVE LINDENTHAL

Public Works 7
By CHARLES H. MOOREFIELD

Money Economy 8
By ADMIRAL FREDERIC R. HARRIS

Registration of Engineers 9
By D. B. STEINMAN

General News and Comments 10
- Civil Works Chiefs to Ask More Funds
- Highway "Needs" and the Need for Work
- Good News Received Late

New York and New Jersey News and Activities 11
- Civil Works Program
- Executive Board Meeting
- Chapter News

Directory of Engineers 23

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1933 — Its Significance

A New Era Dawns

Engineers Must Direct

THE year 1933 belongs to history. Its importance in the long chain by which man has divided time, since the days when Chinese philosophers or Chaldean shepherds first identified the return of the seasons with heavenly bodies, can perhaps be better judged by another generation. One thing alone appears certain, the rest is speculation. It is the apparent reality which forms the text of these comments.

Today the people of America are witnessing the dawn of a new era in the evolution of man's social status. More than a century has passed since the United States and France lighted the way for mankind by decreeing political equality that gave ruler and humblest person alike the exalted rank of citizen. The removal of the shackles of financial bondage is a desideratum as indispensable to the elimination of human misery as is the establishment of religious or political freedom. There is no more justification for placing financial or property rights above human rights than there was for recognizing the divine right of kings; and, if mankind is to survive, it must shortly decree that the conscription of human life must follow, not precede, the conscription of property. Whether it be to appease the superstition of primitive paganism, to satisfy the ambition of martian princes, to give vent to the venom of persecution, or to balance starvation against superabundance and individual greed, there can be no extenuation strong enough to refute the indictment that, when caused or permitted by tribe, state or nation, the premature curtailment of human existence is, in the final analysis, a disregard of the injunction of the fifth commandment for which society must answer collectively and individually to the Maker and Giver of all life.

Humanity has witnessed the successive enthrallment of the masses by various minorities. With each liberation from a minority domination, has come the hope that here at last was negation conclusive to the philosophy that "Man never is, but always to be blest." However, time and events have but served to strengthen the poet's contention. What the future has in store no man can say. That the enslavement of mankind is forever doomed by the latest social revolution is a goal scarce likely of achievement either in this generation or in those to come. Equality of talent, individual omnipresent charity and the universal dispensation of justice might well be deemed essential concomitants of a millenium. But alas, it is only too obvious that all men are not equally endowed by nature; that charity, while present in the heart of man, is distorted and thwarted by the puny mind which cannot eliminate the ever present ego that prevails equally amongst savages and amongst savants; and that absolute justice is a divine attribute of which imperfectly endowed man is incapable. Unless human capacity and human nature be miraculously changed, there is no evidence which, in accordance with tests demanded by true science, can establish the fact that the pangs of anger, greed, lust or envy are any less today than two thousand years ago. This statement is made with a full realization that it will be generally challenged, especially by pseudo-scientists and selfstyled optimists. In anticipation the writer suggests that critics investigate the true meaning of the words science and optimism. Also let them reflect upon the thought that science can enslave as well as serve mankind, even as have the economic philosophy and financial practices of the 19th century. That humanity has made tremendous progress in the knowledge and use of real science—especially regarding physical principles and laws beyond man's power to change, there can be no question; but in the field of sociology, every man is as much an authority as his neighbor, for neither can, to any appreciable extent, control the mind or thoughts of a normal fellow-being, except, occasionally through the use of a personal magnetism or power that is the peculiar endowment of an individual and which, notwithstanding the developing value of formal education, comes not from the speculations of a class room.

One may justly wonder what prompts the above divagations. They are purely personal thoughts, humbly offered as such and not as professions of knowledge. They are born of a hope that humanity may awaken to the paradox of modern society, viz., the attempt to run a civilization created by scientific men, without the guiding influence of those trained to appreciate the difference between knowledge and opinion and capable of

(Continued on Page 13)

PUBLIC VERSUS PRIVATE INFLATION

Henry Robinson Towne Lecture

Annual Meeting—A. S. M. E.

David Cushman Coyle

THE events of the past few years have brought to public attention the fact that business is now dependent on markets. Before the war there was a tacit assumption that the problem of industry was how to produce goods at a low cost. Efficiency and economy were believed to be the keys to success. But now the emphasis is shifting to purchasing power. The creation and preservation of a market is now seen to be the key to prosperity. This fact is known in general to everybody, but the implications of this new emphasis on markets are not yet thoroughly understood.

In general, business pays out about as much money as it takes in; that is, in general business supplies to its employees, stockholders, creditors, and parasites, about enough money to buy the goods and services that are for sale. The stability of active business depends on a complete circulation of this buying power. Those who obtain their income from productive enterprise of any kind must pass on the medium of exchange so that business may receive it again in payment for new goods and services. There are two established mechanisms by which surplus personal income has customarily been returned to circulation.

First and most respectable is the mechanism of saving and investment. Surplus income that is not spent by its primary recipient may be invested in capital goods. The money is then distributed to the building and machinery industries, where most of its appears as wages and makes up an important part of the market for consumer goods. Thus the surplus income of those who have more than they can or will spend is transferred to the hands of workmen who can and will spend it. This is one form of the distribution of income. The disadvantage of this mechanism is that it leaves behind it a deposit of debt, in the form of industrial liabilities equal to or greater than the quantity of surplus income that is distributed. A small portion of this debt is amortized each year, but the major part is allowed to accumulate until a depression occurs, when the excess is removed by bankruptcy. This mechanism of distribution by saving—investment—bankruptcy—paralysis necessarily takes on a periodic or harmonic-vibratory motion. Recovery and prosperity are periods of investment, the building of debt, the dissipation of the corresponding money through the capital goods industries, and active markets well irrigated with fresh streams of buying power. Collapse and depression are periods when the worthlessness of the debts is acknowledged, no new debts are incurred for construction purposes, the capital goods industries are idle, and business starves for lack of buying power. When enough debt has been wiped out by bankruptcies, then the debt-building process can start anew, and the cycle repeats. The cycle is a true harmonic vibration because it has a downward acceleration proportional to its distance above the mean, and an upward acceleration proportional to its distance below the mean. It acts like a weight vibrating up and down on a spring.

The second mechanism for distributing surplus is made up of the system of contributions voluntary or involuntary, through which those who have extra money pass a part of it over to those who have none. By this mechanism the employees of colleges, churches, hospitals, and other service organizations are supplied with buying power and become part of the market for productive industry. In like manner the graduated income tax removes another part of the surplus personal income and transforms it into the salaries of public servants who then take their place among the buyers of goods and services. The characteristic of this non-investment type of distribution is that it does not leave behind it any deposit of debt. Your contribution to the Community Welfare Fund brings you a card of acknowledgment, and you know at once that you are never going to get your money back. When you buy a guaranteed Building Bond, on the other hand, you do not find out until several years later that you are not going to get your money back. This difference in the time at which the contributor realizes the permanent nature of his contribution is important because it affects the periodicity of the process. Investment is a contribution with postponed realization, and is therefore periodic. The distribution of income through recognized contribution or income tax, on the other hand is non-periodic, since the transaction is in each case immediately closed.

Thus the degree of periodic dislocation of business will be in part determined by what proportion of the distribution of income is effected through the investment-and-loss mechanism and what part is effected through the contribution and income tax mechanism. In general, the higher the income tax, the more stable the business system.

Another important factor in the instability of business is inflation and deflation, or the creation and destruction of the medium of exchange. Here again, among the many varieties of inflation and deflation two are of particular interest at the present time. The first is the type for which the conservative newspapers are now hoping: the "normal" stock market recovery that has been a feature of past business cycles at the end of the depression period. In this type of inflation, with the revival of what the brokers call "confidence," or public forgetfulness of past experience, the prices of securities are marked up twenty or fifty or a hundred billion dollars. The added price is fiat purchasing power. The securities may be used as

(Continued on Page 13)

WHITHER ENGINEERING?

Annual Meeting—A. S. M. E.

December 5th, 1933

By A. A. Potter

Whither Engineering? Inevitably toward public service—toward the ideal that the engineer is a public official, charged first with a public function, as a lawyer is an officer of the court, responsible for its dignity and honor. Inevitably toward a wider responsibility—toward the ideal that he is responsible for maintaining that balance in the social structure which modern conditions have sometimes so violently upset. Inevitably toward active participation in political affairs where clear thinking and courageous action are badly needed. Inevitably toward a higher type of education—toward the ideal that men shall appreciate their time and understand its trend. Inevitably toward a more closely knit professional organization and a more pronounced professional consciousness—toward the ideal that the wider duties and greater responsibilities of our calling may be met promptly and effectively.

THINKING individuals and progressive social groups must reflect on the past and plan for the future, must take stock of their objectives and seek improved goals. The engineer must analyze his work, study trends, and adjust himself to changing conditions. He has in the past said little about his work and has infrequently concerned himself with public questions. It is timely for us to inquire, whither engineering? What are the thoughts, plans, and attitudes affecting our profession? If we know what is going on about us and what to do, let us consider the means by which we may best apply our knowledge and experience for the public good.

Our times are distinctive, owing to the introduction of science and engineering in the everyday affairs of everyday people. Whether civilized man likes it or not, he is destined to live and to work in an environment affected to an increasing extent by science and technology. While some blame the engineer for the sufferings of our times, the fact is that scientists and engineers should really be credited with the delivery of humanity from the so-called Malthusian doom. Whereas in past civilizations man had difficulty in producing enough to maintain himself above the level of mere existence, the engineer, by applying science to practical uses, assures an abundance of the world's good for all, given only an effective mechanism of exchange. Present ills are not due to a lack of material wealth to satisfy human needs, but to our inability to distribute it rationally. However, our present problems, serious though they be, should not prove as difficult as those resulting from scarcity and want.

Also, it should be recognized that while the work of the engineer in improving methods of production has reduced employment in some specific cases, the engineer is primarily a creator of both wealth and of opportunities. By proper application of science he has created, during the past 65 years, where nothing was before, such giant industries as those which manufacture automobiles, typewriters, radios, talking machines, airplanes, and telephones, as well as new utilities which are concerned with electric communication, electric transportation, and electric light and power. These are creations, not developments. These are not displacing labor, but are adding new opportunities for profitable employment and happy careers for millions of people. It is reasonable to expect the engineer to develop new industries in the future as he has in the past, creating new opportunities, new jobs, and new careers. He knows what developments are needed and is able to direct the scientific researches and the manufacturing methods to produce results of value.

The engineer has contributed to the general welfare by reducing drudgery, by providing new entertainment, by saving time, and by increasing material possessions. His contributions are being fully appreciated, as to an increasing extent it is realized that America's predominant industrial position is due largely to the engineer. There is a general feeling, however, that he can make additional contributions by taking a greater interest in social and economic problems. Not that the engineer is a miracle worker who can bring about, through his own efforts, a perfect social order, but it is felt that, dealing as he does with facts rather than opinions, he should be able to help with the social problems affecting us. He is skilled in the proper use of science and machinery and is in a position to forestall movements likely to hinder invention and discovery or retard the introduction of improved methods. He may even be able to contribute, by his straight thinking, to a better solution of the social and economic problems which at present confront us.

The engineer has substituted knowledge for guesswork in dealing with technological problems. Has he the wisdom to apply the same straight thinking in his dealings with human relations, social welfare, economics, and finance? It is to be hoped that we are now standing on the verge of a new and better epoch, a period during which the actions of engineers as individuals and as members of a great profession will be influenced still more by clear thinking and by true measurements, and less by irrational opinions, prejudices, traditions, and precedents.

Even though the engineer may not be able to solve, offhand, the problems of human organization,

(Continued on Page 15)

New Monetary System

Contends Gold Not Essential

By Gustav Lindenthal

UNDER the title of "A Scientific Monetary System" Gustav Lindenthal, famous Bridge Engineer, presents a novel theory that purports to eliminate the necessity for a metallic basis.

Persons interested are urged to communicate with Dr. Lindenthal at 26 Exchange Place, Jersey City.

The introduction and appendix, which contain the basic principles, are published herewith. The thesis should interest all engineers.

A Scientific Money System

Introductory

The present world-wide crisis is marked incisively by one universal characteristic, i. e., inadequate medium of exchange, which the so-called gold-standard system of money, as used in most countries, appears entirely incapable of solving. The whole world is searching for a substitute, but the ancient veneration for gold prevents it from seeing the archaic nature of the so-called gold-standard money system, which is a misnomer, because it consists prevailingly of (interest charging) private credit, functioning as a medium of exchange and only a small percentage of gold as a veneer. It is a very dear system even with this thin veneer.

We must consider, that within fifty years, the world's commerce—now estimated at over 3,000 billion dollars per year and requiring for its transaction a volume (of that kind of money) of over 300 billion dollars—will probably have more than doubled and that according to all known geological indications new gold will be only an inconsiderable addition to the present quantity in the world, valued at about 12,000 million dollars. Present experience shows that this is already too much of a gamble and entirely insufficient to maintain the complicated so-called gold-standard money systems as developed the last fifty years, and that they are in constant danger of collapse with growing world-trade and a thinner veneer of gold. So that a money system which practically requires no gold has become a necessity.

But the change will not be easy. The fight for an improvement may be long and bitter, because the belief that gold is the safest standard of value, around which all other values revolve, is an ancient and deeply ingrained superstition like the one in the past that our earth is the center of the world, around which the sun and the planets revolve. Who dared to doubt it? Was it not proved every day by our senses and confirmed by holy writ? It took over two hundred years after Copernicus for mankind to change that belief and see its error.

So with the worship of gold as money standard, it is taught at all universities—the great majority of our professors of economics are saturated with it.

I believe, that our enlightened age will be able to overcome the inertia of prejudice more speedily and will recognize that gold is neither the center of wealth nor a reliable standard of value for it. But that on the contrary, *it is a commodity just as often unstable in value as other commodities,* besides being the least useful metal on earth. High civilization can live without gold, though none could live without iron.

We may grant, that the one quality which makes gold universally acceptable as an exchange commodity, is the native human desire for an indestructible substance of limited quantity, and therefore, high priced in a trade. It is entirely feasible to utilize this quality of gold for money in foreign exchange, but it need not and should not affect the stability of value of twenty and more times the quantity of money of different forms in domestic use, as shown further on.

The present panic has the mystifying and unprecedented aspect that millions of people are exposed to starvation in the midst of superabundance of food and other necessaries of life, because they lack the money to pay for them, and in their helplessness do not have a chance to earn it by useful work, of which there is no end, if properly organized.

Money is now accumulating in the banks from the forced and ruinous liquidation of useful and tangible property, which could not earn the usurious interest charges on debts that the present fictitious credit and gold money system had piled upon it for inflated values. That blood money, now accumulating in the banks is waiting for new investment, but which no one but the Government now dares to make, from fear he would be placing only a new rope around his neck, strangling him the minute the fixed interest for the loaned capital cannot be earned. Therefore, no one will take the risk to employ labor, and therefore we have 13,000,000 workers and their families starving as in a desert.

But the most dangerous side of the so-called gold money system, is that it produces fictitious paper capital, striving for a workless income on capitalized excess earnings and in the form of bank credit, charging usurious interest and dividends, ahead of wages and taxes. It is this tendency inherent in the false gold money system, coupled with a complicated hazardous banking system, which has put everybody (from the Nations down to the day laborer) into the chains of modern debt slavery. This fact stamps this kind of money and bank system as essentially dishonest, however much it may be praised by economists and bankers, who profit from it.

Here lurks the greatest danger to the State itself. Let a demagogue leader arise with the slogan: *"Down with the workless income, down*

(Continued on Page 15)

PUBLIC WORKS

And National Economic Stability

By Charles H. Moorefield

Reprint, by permission, from December Issue "Roads and Streets"

THE fact that there is a relationship between public works and national economic stability has been definitely recognized by our government in the Recovery Act of 1933, which provides $3,300,000,000 for prosecuting such works over a period of two years. Only about 12 per cent of this fund is specifically allocated for highway work, but judging by the prevalence and intensity of the arguments regarding the roads to be improved with the highway allocation, I should say that about 97 per cent of the public interest is attaching to that part of the Public Works Program. When I speak of public works, therefore, I have in mind principally road work.

In the same way, economic stability, judged from the widespread expressions of public interest, means establishing and maintaining balanced budgets. That is to say, we, as individuals, groups and governments, are not economically stable except when we are paying for what we get.

During the past few years, we have all been more or less bewildered over the problem of keeping our outgo from exceeding our income. The one method, obvious to us all for maintaining a proper balance has been the reduction of expenditures, and the general application of this method has resulted in the spiral spread of unemployment throughout the length and breadth of the country. As timid individuals we, perhaps, had no other way open to us. As an organized people we became confused in the maddening convolutions of credit, currency and banking and simply failed to function.

Collective Responsibility for National Economic Welfare—Now that our government has accepted the principle of collective responsibility for the national economic welfare and is attempting to coordinate business and industrial organizations, together with public works activity, so as to banish unemployment, it seems fitting that we who are so intimately concerned with public work should understand the philosophy of controlled economy to which we are committed. Certainly we should have in mind a definite purpose to conform our road work with the aims of this new philosophy.

It seems to me that we must accept as fundamental truth the principle that we can supply no more of our wants, through the intercession of government or otherwise, than we, as a national group of individuals, are able to pay for. Also, it should be manifest that our ability to pay for what we want depends upon our capacity to produce, distribute and utilize the commodities and services that go to make up the objectives of our wants. It is equally manifest that to realize the full measure of this capacity we must intelligently apply our available man power to the task. Unemployment is wholly inconsistent with the idea of balancing budgets on a national scale. We cannot hope to increase our collective material means by curtailing production nor by limiting the hours of labor. Such means may be necessary at this time to secure a proper distribution of employment and may be warranted at any time as digestive stimulants to aid in absorbing a burdensome abundance of certain kinds of consumables, or as social influences designed to encourage fuller living. But they assuredly cannot be relied upon to re-establish for this country that economic supremacy which is ever dependent upon the intelligent application of effort.

Public Works to Utilize Surplus Labor—In setting out to recover economic equilibrium our government is, quite naturally at the beginning, making an effort to redistribute the burdens and adjust the supports of our economic structure so as to keep what we have from toppling. The economic philosophy behind these adjustments undoubtedly contemplates our continued development on a stable basis and with assured opportunity for all of us to enjoy such material prosperity as our energy and resources may merit. It also must contemplate appropriate and continuing provisions for storing that great national treasure available only through the utilization of our surplus labor. The only rational governmental plan for storing this treasure is in the extension of public works. Such extension, wisely planned and executed, means not only building up a balance on the credit side of our national budget, but also the creating of facilities that will in turn release more surplus labor for the more rapid extension of public works.

Some idea as to the quantity of surplus labor that might be employed on public works at this time without disturbing the commercial industries may be gained by considering our experience during the years from 1918 to 1929. In this 12-year period we kept our surplus labor occupied largely in creating commodities and services for foreign consumption that were paid for principally in promises that have since been defaulted. That was a rather poor way of storing our treasure, but we were getting along beautifully until we discovered the hole in the bottom of the bag. Actually we are no worse off, collectively, now than we were in 1918 because we have just as much of everything as we ever had, and more capacity for producing nearly everything. Furthermore, I am not even suggesting that we should have acted any other way than the way we did act. I am merely pointing out that we have just four short years ago completed a 12-year demonstration of this nation's ability to support itself handsomely and at the same time furnish to foreign countries an enormous quantity of surplus goods and services. The aggregate value

(Continued on Page 17)

MONEY ECONOMY

Commentaries Upon Past and Present

Admiral Frederic R. Harris

IN considering any well established custom or system in use by human society, such as the "money economy," it is well to remember that the same has come down to us from time immemorial, subject to modifications and changes, sometimes minor, sometimes of a sweeping nature, but always largely because of the special conditions or circumstances that society finds itself in, or thinks it finds itself in. People make mistakes in these readjustments and revampings and through trial and error correct the more glaring mistakes and attempt to improve upon what is left.

It is quite impossible for human beings, and therefore human society, to successfully disregard historical precedent and completely ignore what they have inherited in the way of laws, social custom, conduct, or methods of procedure, and this applies to so-called spiritual things, even as to material ones.

Human society may attempt to revamp or reform its inheritance, and if the modifications better fit the changed conditions of society, they are useful and well-serving; if they do not they will not survive, and, if persisted in will tend to destroy that special aggregation of society which stubbornly persists in attempting to apply them.

We are what we are because of what has gone before us—the summation of all human knowledge and experience of bygone ages is brought to each new generation by word of mouth or writing. No generation of human beings is innately wise enough to disregard the lessons of the past and set up something brand new and justly expect the same to prove workable.

Reform is all right if it is moderated and minor, but any far-reaching attempted reform which disregards the established order of things, usually reckons without the element known as "human nature." Our institutions, our laws, our economics, including our financial systems—on examination show weaknesses, but these are usually ascribable to the weaknesses and faults of human nature. It has been aptly said that "We have a government as good as the people want," and the same is applicable to our financial structure.

There are glaring faults in our "money economy." We have, undoubtedly, in this advanced age adhered, without change, too long to the traditions of the past and especially to the gold tradition, but before changing it we had better look into the philosophy and if we do, we will find many sound reasons why human society has—since the Greek days—fallen back on gold as a monetary standard. I admit it has frequently deserted gold, but always it has come back to it.

We could dispense with gold entirely and use a token money—paper or something else—if it were not for the frailty of human nature, and if we could depend on the political heads of States or Nations to be superhuman in both their knowledge of finance and in their honesty of management. They have never before in history measured up to these two requirements, and even though an optomist as regards man becoming better and better, I do not see a realization of human perfection in the near future.

This difficulty of application is all due to a very simple thing, which is best understood by taking two human beings instead of nations. One of these, on account of our "money economy" basis, can only secure and consume to the extent that he can produce and dispose of. If you interject the money value, it means that he can only spend as much as he earns. If he goes beyond this, the difference must be made up either by credit to him or in his drawing on a reserve fund of wealth, money, metal, etc., that he accumulated in previous years. This same process applies to groups of people or nations dealing with each other. Imports must balance exports or the difference must be made up by credits, borrowing or drawing on the reserve accumulated in previous years. Such reserve, since goods are not imperishable, is very limited and is usually represented by the currency, or gold backing of currency, of the country. If too much of this be drawn on, there will not be enough left for the business of the people of the country. Of course, currency is mostly paper, but it is based upon and limited in most civilized countries by a metallic or other reserve that has to be maintained in some proportion to it.

When a country has to make up a deficiency, other countries will not accept its paper currency, since the same cannot be used in their respective countries, but require that they be paid in something that can be universally used, and that is—gold. It is very apparent that if the balance of trade is against a country and continues against it for a long period of years, that country will not have the gold to make up the mounting deficiency. It will try to make it up by credit, home or foreign borrowings, usually in bond issues, but this means a mounting tide of balance against it due to the interest requirements and the block payments needed as bonds come due.

Under the managed currency system, without some regulation, supply beyond the control of the nation, such as the gold reserve, a country in the above described condition would soon face the condition wherein that, first having defaulted on its bond issues or interest payments, it would have depleted its gold to a small percentage of what is required in any stable reserve, or the same reserve would have entirely vanished. The next step would be to start the printing presses going and very

(Continued on Page 18)

Registration Of Engineers

Its Purposes and Accomplishments

By D. B. Steinman
Chairman, New York State Board of Examiners for Professional Engineers

ENGINEERS are pioneers, path-finders, trail blazers in almost everything they do,—with one exception. They have left it to the other professions to be the pioneers and trail blazers in the field of securing professional recognition,—in the field of organizational and legislative activities for the advancement of the status of a profession. The medical profession started over eighty years ago, the legal profession over fifty years ago, but the engineering profession is just commencing to direct its planned activity to the problems of professional standing and recognition.

We are fortunate that others have blazed the trail and that other professions have solved for us many of the problems involved. If there is any wisdom in the collective mind of the Engineers of the country, we will lose no time in profiting by the successful examples of the professions that have solved these problems before us; and the first step in the solution of this general problem is the enactment of laws regulating the practice of the profession.

Engineers' registration laws are, of course, necessary for the safety of the public and for the protection of public interest; but they are also necessary for the protection of the good name of the Profession, because a profession is judged by the failures of the incompetents and the conduct of the unworthy unless a clear dividing line is established in public recognition between the lawful practitioners of the profession and those who are not admitted to practice.

Registration is the only means by which our Profession can enforce its codes of ethics and fair practice. Without registration laws, code of ethics and fair practice are merely documents that may or may not be respected by the individual. But with the backing and sanction of the law we have it in our power in the future to make these standards of ethics enforceable and to stop the practice of those who, by their malpractice, are injuring beyond repair the good name of our Profession.

Registration is the only means whereby we can get the force and sanction of the law behind the aspirations and efforts of our Profession. With the aid of the registration laws that have come into being in our statute books in the past twenty years, the Engineering Profession has made more real progress, in the solution of many of its problems and in securing public recognition, than in all the decades preceding. Ten years ago registration was viewed by many in our profession as a movement of questionable efficacy, but now registration is an established fact, and it is here to stay. A Model Registration Law has been developed and it has been endorsed by all of the leading Engineering Societies, both national and local.

Engineers' registration laws (covering Professional Engineering and Land Surveying) are now in force in 27 States, and in two more States we have laws for the registration of Land Surveyors. In these 29 States are located over 85 per cent of the Engineers of this country. Over 40,000 Engineers have already been registered—over 10,000 in New York State and over 6,000 in California. Engineers' registration is now a real fact, controlling engineering practice in more than one-half of the States of the Union. More States are being progressively added to the list.

Teeth have now been put into these registration laws, and enforcement procedure is being progressively strengthened. The machinery of enforcement has already been put into effect, and men have been arrested, tried, and fined for practicing Engineering without a license. In one significant case, a man was convicted of man slaughter for the collapse of a structure which he had designed without a license to practice Engineering. In another case, an unlicensed man was sentenced to the workhouse for using the designation "Civil Engineer" on his letterhead. The civil courts have established a significant precedent in repeatedly dismissing actions for the collection of engineering fees when such actions were brought by men who were not registered as Engineers. The courts have ruled that a contract for engineering services is invalid if the party undertaking to furnish such services is not registered. The courts have repeatedly disqualified experts offering engineering testimony when such experts were found to be unregistered. The Supreme Court in one State ordered a concern to abandon its trade name "The Standard Engineering Company" because the members of the firm were not registered Engineers. The courts have ruled that even college graduates with engineering degrees may not use such designations as "Civil Engineer" or "Electrical Engineer" until they are admitted to professional registration.

The machinery of disciplinary action has already been put into effect, and licenses have been revoked on proof of incompetence, misrepresentation or unprofessional conduct.

Public officials are progressively taking a keener interest in the enforcement of Engineers' registration laws. Construction plans signed by unlicensed men are rejected by Federal and local officials. Men not registered as Engineers are debarred from holding office as City Engineers. Civil Service Commissions are cooperating by requiring a license as a prerequisite for appointment to engineering positions. In every way registration laws are becoming more real and more effective in their operation.

During the past few years another step of

(Continued on Page 20)

General News And Comments

Informative Items

CIVIL WORKS CHIEFS TO ASK MORE FUNDS

Extension of Relief Program to May 1 at Added Cost of $500,000,000 Urged Feb. 15 Deadline Opposed

Early indication by the government in Washington as to its plans for possible extension of the civil works program beyond Feb. 15, the date originally set for its completion, was declared essential to the complete success of the program by Civil Works Administration officials yesterday.

A survey of the progress made to date under the civil works program here revealed that it would be difficult if not impossible to fill the entire quota of civil works employes allotted to New York City before Feb. 1, or only a fortnight before the original "deadline" set by the Federal Civil Works Administration.

Since it is generally expected that the Federal Government will not permit the 4,000,000 unemployed who were to have received jobs under the CWA throughout the country to be thrown out of work in Winter, officials here declared an early announcement by the government of its plans would be desirable to sustain the morale of the workers and to facilitate larger projects, which cannot be developed and executed before Feb. 15.

The expectation is that the Civil Works program will be extended to May 1. This would entail an additional appropriation of $500,000,000 or more.

140,000 on Payrolls Here

A summary of the Civil Works Administration program as carried out to date was given by Alfred H. Schoellkopf, State Civil Works Administrator, showing that 140,000 persons are on the payrolls in this city. This is 35,000 under the quota of 175,000 allotted to the city.

Of the 140,000 now at work, 103,000 were taken over from the rolls of the City Emergency Work and Relief Bureau when it was disbanded.

Mr. Schoellkopf pointed out, however, that in addition to adding 37,000 persons to the payroll, the Civil Works Administration had to develop projects that would permit the employment of the original group of 103,000 on full time. Previous to that these workers had been employed only on half time.

He said projects designed to give employment to 182,000 persons in this city had been approved by the State Civil Works Administration and that new projects were being developed. For the entire State the number of projects approved is sufficient to provide jobs for 470,000, although only 300,000 are actually at work out of the State quota of 396,000.

As evidence of the consistent extension of the program, Mr. Schoellkopf

(Continued on Page 21)

HIGHWAY "NEEDS" AND THE NEED FOR WORK

L. N. Whitcraft

With the motorists of New York paying $85,500,000 annually in state license fees and gasoline taxes, the appropriations to the highway department are "nothing" compared to its "needs" said Captain Arthur W. Brandt, state commissioner of highways in a recent statement. This is a deplorable situation that should command the attention of every taxpaying citizen.

Properly expended, the $85,500,000 would provide employment for a vast army of citizens, both in the actual construction of highways and in the many diversified industries and transportation agencies of the state. The difficulty is that most of the huge revenue derived from the New York motorist is used for purposes that provide neither construction nor employment. It is this situation which apparently caused Commissioner Brandt to state that highway appropriations are inadequate.

Exceedingly regrettable and irreconcilable is the fact that, with each succeeding year less and less of our motorists' taxes are used for the purposes for which they should properly and equitably be spent—the construction, maintenance and general improvement of highways in the interest of safe and economical transportation.

Using the motorists' special taxes for budget balancing, doles and miscellaneous purposes unrelated to highways is an unsound system. It not only decreases the volume of employment but actually keeps men, who are yearning for honest work, on the relief rolls. The system is uneconomical in that it actually destroys opportunities for both citizens and industry to make fair earnings and in turn contribute taxes.

That this destructive system seems to be increasing rather than diminishing is made apparent in a recent amazing statement by Commissioner Brandt. Addressing a group seeking the modern improvement of a dangerous section of a main highway between Rochester and Buffalo he said:

"Our state appropriations this year are almost nothing compared to our needs and it is apt to be that way another year."

Here then are the irreconcilable facts:

New York State "needs" highway improvements.

A vast army of our citizens need work.

New York State's motorists pay $85,500,000 annually in special taxes. That sum, properly expended to supply the state's "needs" for highway improvements, would go a long way toward transferring men from relief rolls to pay rolls.

It is within the power of the Governor and the Legislature to correct this condition. Not only is there an immediate need for a genuine and widespread revival of employment and industrial recovery, but there is just as great a need for a more equitable distribution of the tax burden. Every organization within the state interested in, or concerned with, fair taxation, highway improvements and unemployment relief could use its influence and power to have the Governor include in his 1934 budget recommendations to the Legislature an item that would allocate all, at least a substantial part, of the motorists' taxes to take care of the "needs" of New York's highway system so that the needs of the unemployed might be alleviated.

Despite the fact that the diversion of motorists' taxes away from the highway field is being widely recognized officially and judicially, as illegal and economically wrong, New York continues to set a pace as a leader among states which divert such funds to less productive uses. In contrast to this, other states are planning to increase their highway appropriations as a means of practical unemployment relief, having recognized the evil and economical fallacy of diverting the motorists' taxes.

To the average citizen who has suffered in silent humiliation through the past two years of unemployment, the diversion of highway funds in New York is more than ever bewildering, especially when viewed in the light of the Governor's recent appeal to the Federal Government for an additional $10,000,000 for the improvement of roads as a needed unemployment relief measure. In refusing to grant the Governor's request, it is likely that the Federal authorities had in mind that fact that this state's own highway funds are being diverted and not used for the purposes for which the Governor and Commissioner Brandt indicate there is an urgent "need."

* * *

GOOD NEWS RECEIVED LATE

R. J. Smyth—Chapter Editor

Word was received just before going-to-press that Mr. Arthur V. Sheridan, Past President of the State Society and at present one of its trustees, has been elevated to the office of Chief Engineer of the Borough of The Bronx.

The Engineers of the State, acknowledging their indebtedness to Mr. Sheridan for his zealous, enthusiastic and indefatigable services in advancing the status of the profession, rejoice in his elevation to the high office he now occupies and extend to him their most cordial good wishes for success.

NEW YORK AND NEW JERSEY NEWS AND ACTIVITIES

CIVIL WORKS PROGRAM
Information by President Chapman

The following communication was forwarded to all Chapters on December 22, 1933.

THE NEW YORK STATE SOCIETY
of
PROFESSIONAL ENGINEERS
Grand Central Terminal
New York
December 22, 1933.

Dear Sir:

With the idea of obtaining employment and wages in keeping with the services rendered, for engineers, surveyors and their assistants and insuring expeditious and economical progress on relief work, the Federal Civil Works Administration for New York State has been asked to employ experienced and qualified engineers and assistants on C. W. A. construction and maintenance in directing and supervisory capacities. They have been asked to urge the county and city administrators to call upon the respective chapters of the State Society for cooperation in obtaining and selecting employees for such services.

Under date of December 9th and 13th, the Director of Projects, Mr. William H. Jones, has advised:

"We appreciate the position of engineers and the advantages of securing them through your organization, and shall suggest to the local administrators that they call upon the New York State Society of Professional Engineers when they require engineers.

"In every instance the Civil Works Administration of the State of New York are placing at work only qualified men in their respective positions, and we realize the position of the engineer in every case."

The Civil Works Administration has today furnished me with a list of the C. W. A. Administrators in the respective counties, the names of those in the county or cities within your chapter jurisdiction being on the attached list.

Will you kindly make personal contact with these officials offering the assistance of the Society and particularly your chapter, in these matters, and also contact any unemployed members of the Society. REMEMBER, EVERYONE WISHING EMPLOYMENT ON C. W. A. PROJECTS MUST REGISTER!

While it is understood, as yet, no salary or wage scale has been set up for other than skilled and unskilled labor, it is in order to urge the payment of wages in keeping with the service rendered and that the minimum for engineers and assistants should be not less than that fixed for skilled labor.

This is a matter requiring speedy and early action and may result in

(Continued on Page 21)

EXECUTIVE BOARD MEETING
New York—December 17, 1933

MINUTES OF THE SPECIAL MEETING OF THE BOARD OF DIRECTORS OF THE NEW YORK STATE SOCIETY OF PROFESSIONAL ENGINEERS, INC.

A Special Meeting of the Board of Directors was called to order by President Chapman in Room 2943, Grand Central Terminal Building on December 17th at 12:25 P. M.

Present were President A. G. Chapman and Messrs. McKee, Holst, Sells, Watt, Fox, Sheridan, Lamb, Smyth, Hausmann, Ward, Bartley, J. M. Welsch, Steinman, Riedel, Zurmuhlen, Burke, (C. W.), McKenna and Cram.

In the absence of the Secretary, Mr. Cram was designated acting secretary.

Reading of the minutes of the October 20th meeting was dispensed with as they had been submitted to the membership.

The Financial Secretary made no report, his regular monthly statements being deemed sufficient.

Mr. Chapman for the Membership Committee reported development of Chapters under way in Niagara County, Putnam County and an affiliation of Onondaga with Tioga County in forming a joint Chapter.

There were no reports from the Publicity or Legal and Grievance Committees.

Under Legislation Mr. Chapman expressed the view that some changes in the Exemption Clauses of the License Law particularly in relation to public service corporations might well be studied.

Amendments to certain other laws affecting administration of Counties, cities and towns whereby certain positions would be required to be filled by licensed engineers seemed to be desirable and there is need for change in the State Highway Law in relation to County Superintendents who should be engineers.

There seems to be a need for a further clarification of the definition of the term Land Surveyor as given in our law.

No report from the Ethics and Practice Commitee.

The Constitution Revision Committee will issue a new draft of the proposed revisions within the next few days.

The proposed Dutchess County Chapter constitution as drafted would provide for a grade of membership called Guest Members who could be any one not licensed. Dr. McKee objected to any such class of membership. Mr. Ward suggested the term "Sub-license member."

The meeting seemed to be of the view that there should be no oppor-

(Continued on Page 21)

CHAPTER NEWS
Raphael J. Smyth, Chairman, Committee on Chapter Activities

NIAGARA COUNTY

Another force has temporarily organized and is on the march to join the advance of the New York State Society.

On December 12th, twenty-three professional Engineers of Niagara County gathered at the Chamber of Commerce, Niagara Falls. They were addressed by Mr. Fletcher H. Burke, Secretary of Erie County Chapter and at the conclusion of the address formed a temporary organization of the Niagara County Chapter. Mr. A. L. Williams and Mr. E. R. Cole were respectively elected as Temporary Chairman and Secretary. A Committee on Organization, composed of Mr. George W. Stone, Mr. C. A. Tryon and Mr. E. E. Resse, was created.

Our best wishes for success go forth to our brothers of the profession in Niagara in their organizing endeavor. Sincere appreciation of the assistance of Mr. Fletcher H. Burke of Erie is acknowledged and cordial congratulations are again extended to Mr. Fred H. Zurmuhlen, Chairman of the Membership Committee of the State Society, whose masterly skill as an organizer is a constant challenge to the admiration of the members of the Society throughout the State.

* * *

DUTCHESS COUNTY

The Annual Meeting of the Dutchess County Chapter was held in the Nelson House, Poughkeepsie, on November 27th. A dinner, which was attended by twenty-five members and guests of the Chapter preceded the meeting.

The following officers and directors were elected: President, Mr. W. A. Schuerman, Poughkeepsie; Vice-President, Mr. C. C. Mitchell, Millbrook; Treasurer, Mr. H. R. Dean, Poughkeepsie; Secretary, Mr. F. C. Fox, Jr., Poughkeepsie; Directors for two (2) years, Mr. G. R. Hustis, Beacon; Mr. A. C. Pearce, Poughkeepsie.

It was reported that the Chapter successfully terminated the continuance of many violations to the licensing law during the past year; that one-half of the number of licensed Engineers in the County were members of the Chapter and that this number would be largely increased as unemployment decreases; that several requests had been received for names of Engineers available for work and in all cases the Chapter furnished the names of all Chapter members who might be interested; that eight Chapter members are assisting a citizen's committee to promote the initiation of County planning; that the minimum salary for Engineering service which might be paid under the proposed "En-

gineers' Code", was condemnably low; that one of the members of the Chapter, Mr. Egbert T. Green of Pawling, was elected to the Board of Supervisors of Dutchess County.

Through the courtesy of the United States Geological Survey the members were entertained with a very interesting moving picture of a "Survey of the Grand Canyon."

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ONONDAGA COUNTY

The cheering news has been received from Mr. H. J. Dawson, President of the Onondaga County Chapter, that the names of eight new members will be inscribed on the dues-paying roster of the Chapter in January—a most encouraging advance into the new year. It is also announced that a meeting of the Chapter will be held at the Syracuse Hotel, Syracuse, on January 8th, which will be addressed by Mr. Arnold G. Chapman, President of the State Society.

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ALBANY COUNTY

The Albany County Chapter held its Annual Meeting on November 29th at which the following officers were elected: President, Mr. Thomas A. Devane; Vice-President, Mr. Francis X. Bode; Secretary-Treasurer, Mr. C. H. MacCullogh.

The meeting was addressed by Mr. Earl Devendorf, Associate Director, Division of Sanitation, State Department of Health, who discussed in a most interesting manner the activities of the P. W. A. and C. W. A. and their effect upon Engineering practice. Mr. Devendorf has been loaned to the Federal Government to assist in the consideration of applications in connection with construction projects.

The Chapter, under the leadership of President Devane, is energetically cooperating with the C. W. A. authorities and is placing all its facilities for service at the disposal of all Engineers or Surveyors, whether they are members or non-members of the Society. This is an admirable manifestation of the Society spirit.

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MONROE COUNTY

Mr. R. H. Hendrickson, Secretary-Treasurer of Monroe County Chapter reports that a meeting of the Chapter was held at the Powers Hotel on December 18th. The meeting was preceded by a dinner which was attended by the members and their guests. A committee, consisting of Mr. Walker, Chairman, Mr. Thomas and Mr. H. Bryan, was appointed to make a study of the rates of compensation paid to Engineers and Surveyors on C. W. A. projects, and was further empowered to recommend to the local C. W. A. administrator such revisions in those rates as a proper regard for the quality of such services demanded. The committee will also recommend that licensed Engineers only be employed in positions of responsibility on Engineering work.

Mr. Thomas was appointed to represent the Chapter and cooperate with the State Society in the preparation of an Engineers' Code.

The following committee was appointed to nominate officers and directors for the ensuing year: Mr. Herrick, Chairman; Mr. Mulryan and Mr. Shumway.

Following the meeting an address was delivered by Mr. James O. Hoyle, State Investigator for the Professions, on the subject of license laws and their enforcement. Mr. Hoyle was warmly applauded and given a rising vote of thanks at the conclusion of his discussion.

* * *

NEW YORK COUNTY

Information has been received from Mr. William H. Yates, Treasurer-Financial Secretary of the New York County Chapter that a membership campaign is being vigorously carried on. Prospective members are being sent copies of The American Engineer, the booklet describing the aims and activities of the State Society, a list of names of the officers of the State Society and the New York County Chapter, and of the Chapter Map of the State.

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RENSSELAER COUNTY

The members of the Rensselaer County Chapter held their Annual Meeting at the Troy Club, Troy, on December 12th, which was presided over by Mr. James M. Caird. The following officers were elected: President, Mr. C. Leonard Ager, Jr., Troy; Vice-President, Mr. James A. Waddell, East Greenbush; Secretary-Treasurer, Prof. Grant K. Palsgrove, Troy.

Highly interesting and informative discussions were delivered by Mr. A. F. Dappert, principal Sanitary Engineer of the State Department of Health on the subject of "Public Health Engineering" and by Mr. Ralph M. Sheldon of Watervliet on the large number of deaths and injuries which are the annual result of automobile accidents in the country.

* * *

CHAUTAUQUA-CATTARAUGUS COUNTIES

The members of the Chautauqua-Cattaraugus Counties Chapter met at a hunting camp near Olean, on November 4th, in response to an invitation which was extended by Mr. W. D. Zielley and Mr. W. H. C. Thyng, both Chapter members. The afternoon was spent in hunting and some of the members returning to camp proudly exhibited the trophies of their successful chase. And, at 6 o'clock in the evening, twenty members and guests were regaled with a feast of fourteen rabbits and three birds together with all the savory gustables usual to a game dinner. (Mr. R. B. Lyon, Secretary-Treasurer of the Chapter, reporting the meeting, gave assurances, however, that the game was not from the "bag" of the afternoon.)

After the dinner a regular business meeting was held and was as successful as could be expected, considering the preceding diverting activities. Mr. William O. Drake, President of the Steuben Area Chapter, Mr. Voorhees, Mr. Fuller—County Sanitary Engineer—and Mr. R. C. Fulmer of Olean were the fortunate guests on this joyous occasion.

The December meeting of the Chapter was held at the Y. M. C. A. building in Jamestown and was followed by a delightful repast served most appetizingly by the fair ladies of that historic town.

All of which foregoing proves that the Chautauqua-Cattaraugusans have learned how to make an inviting approach to, and how to provide a memorably pleasing finish for, their meetings. And it is an odds-on wager that a motion to hold the next meeting of the State Society in Olean, or thereabouts, would be carried unanimously.

* * *

WESTCHESTER COUNTY

Word has come from the Westchester County Chapter that Mr. Joseph Barnett has been obliged to resign as Chairman of the Legislative Committee and as a Director of the Chapter as he has departed for Washington to assume his duties as a member of the Federal Department of Highways. This news will be regretfully received by all as Mr. Barnett has been for years one of the most outstanding members of both Society and Chapter in enthusiasm and usefulness. Our best wishes for success follow him to the Capital.

Two splendid addresses were delivered at the December meeting: One by Judge George W. Smyth on the social influence of the Children's Court; the other by Mr. Frank S. Curtis, Assistant Director of the Joint Westchester Civil Works Administration who requested the Chapter to submit projects for the consideration and approval of his office.

Mr. John Avery, President of the Chapter, appointed the following committee to propose C. W. A. projects: Mr. James M. Duffy, Chairman, Messrs. G. E. Wright, M. J. Hartman, O. J. Collins, S. L. Gotslick, D. B. Metcalf, J. B. Egbert and T. Fenner.

Another committee headed by Andrew M. Anderson was appointed to make a study of the salary scale for Engineers on C. W. A. projects and instructed to make personal calls on Dr. D. B. Steinman and Mr. A. V. Sheridan, Trustees of the Society, to enlist their support in a protest against inequitable rates of compensation.

* * *

QUEENS COUNTY

The Queens County Chapter held its Annual Meeting on December 28th at the Medical Society Building, Forest Hills.

The following officers and directors were elected: President, Andrew K. Johnson, Hollis; First Vice-President, George P. Winn, Jamaica; Second Vice-President, George H. Bruns, Jamaica; Treasurer, George H. McInenly, Flushing; Financial Secretary, Alban Mazeau, Queens, Village; Executive Secretary, Martin Nelson, Long Island City; Directors, William H. Bertram, Edward J. Flanagan, I. W. Conway, Albert Whitehead, Richard Fiesel, H. D. Garretson, Ernest G. Manning, Charles Stratton, W. C. Kochendoerfer, John J. Delaney.

Queens County Chapter has long enjoyed the reputation of being one of the most progressive and effective Chapters in the State. And the election of Andrew K. Johnson—the deservedly popular go-getting Chief Engineer of Highways of Queens—to its

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presidency, is a guarantee that the Chapter will ascend to new heights of service and honor under his leadership.

A statement recently appeared in the news columns of the press that Major Fiorello La Guardia, Mayor of the City of New York, is seeking "the best Sanitary Engineer in the World" to head the city's great Department of Sanitation. Confident that the man sought now resides in Queens County, a large number of the professional Engineers of the County have recommended to the Mayor, the appointment of the retiring president of Queens County Chapter, J. Franklin Perrine, to that important position. Mr. Perrine for many years has had charge, as Chief Engineer of Sewers in Queens, of the design and construction of the sewerage system of that great Borough with its 117 square miles of territory. The professional associates and friends of the Chief Engineer are justly proud of his demonstrated ability and accomplishments in the field of sanitary engineering and welcomed the opportunity of acknowledging their admiration for his professional attainments and of their confidence in his capacity to successfully solve the sanitary problems of the scientific disposal of the storm water and sanitary discharges from the greatest city in the world.

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ESSEX COUNTY, (N. J.)

The following interesting reports have been received through the courtesy of Mr. E. F. Weeks, President of the Passaic County Chapter:

"The Essex County Chapter held a very interesting meeting at Anderson's Grill, East Orange, Thursday evening, December 14, with 26 members present.

"After dinner each man present was introduced to the meeting by name and business connection.

"Routine business was transacted and the chairman of the Welfare Committee spoke on the Welfare of Chapter members at Christmas time.

"Mr. G. W. Knight explained to the meeting the purpose of the Engineers' Division of the New Jersey State League of Municipalities and invited the Chapter members to attend the League meeting to be held in Trenton on January 4, 1934.

"Mr. Knight also spoke on the Civil Works Administration and of the effort being made to provide work for all unemployed engineers in New Jersey as soon as the necessary equipment can be obtained. He also explained how unemployed engineers should register at the Administration Office, 1050 Broad Street, Newark, for work anywhere in New Jersey.

"The meeting was next entertained by Mr. G. G. Laureyns, a member of the Chapter who performed tricks of magic, including card tricks, producing water and even wine from an empty vessel, and found a gold watch belonging to one of the members in the coat pocket of the Chapter vice-president. Mr. Laureyns certainly proved himself a master magician and entertainer.

"The next meeting of the Chapter will be held in Anderson's Grill, Thursday evening, January 11, 1934."

PASSAIC COUNTY

"The Passaic County Chapter held its December meeting at the Passaic Elks Club, Passaic, N. J., Thursday evening, December 28th, 1933, with 24 members present. A dinner in the grill preceded the meeting.

"The business session was very brief. Those engineers connected with the Civil Works Administration, from whom the Chapter desired to hear, are all working day and night to make it a success and so were unable to attend the meeting.

"The speaker of the evening, Mr. J. Hemion, of the Weston Electrical Instrument Company, was introduced by Dr. R. Wiseman, Vice-President of the Chapter. Mr. Hemion gave a most interesting talk on "The Photo Electric Cell and Its Practical Uses" with numerous actual applications of its use in industry. At the close of his address the Chapter members asked many questions of interest which were gladly answered and explained by Mr. Hemion.

"At the January 25th, 1934 meeting of the Chapter to be held in the Public Service Electric Building, Prospect and Van Houten Streets, Paterson, N. J., we will have Mr. J. Hammond, Vice-President of the Citizens Trust Co., of Paterson, who will speak on "The Present Economic Situation and Banking."

"For the February 15, 1934 meeting the Chapter will be addressed by Judge William L. Dill of Paterson.

"On March 22nd, 1934, we will have Motor Vehicle Commissioner Harold H. Hoffman as guest speaker, who will address the Chapter on "Horse Sense and Common Sense." Visitors are cordially invited and will be made most welcome."

* * *

1933—It's Significance

(Continued from Page 3)

demonstrating that social doctrines and theories are not true science, but speculative steps in a process of trial and error by which mankind seeks that form of social existence most acceptable to it, and most adaptable to its ever changing needs and aspirations, the pursuit of which cannot be dissociated from the material progress resulting from the ever increasing contributions of science and invention.

The great problem of mankind is to reconcile an ever changing civilization with an unchanging human nature. This, the President of the United States seemingly visualizes, and expresses by effort, more than any man of this or the previous generation. Material civilization has so far outstripped spiritual development that society must pause and seek a means toward a balance. To an appreciation of the fallibility and weakness of man the Engineer must turn his attentions. To the utter impracticability of maintaining modern civilization without the Engineer, society, however resentfully, must eventually make submission. A change in the social order is at hand. That there may be Engineers, cast from the same mould of human understanding, sympathy, charity and fortitude as Franklin D. Roosevelt, is the hope of America, and perhaps the world.

Public versus Private Inflation

(Continued from Page 4)

money, or they may be placed in the bank as collateral for a loan of fiat credit. In many cases the inflated securities are not moved from the bank box but serve as a backlog for the expenditure of previously hoarded cash. In any case, the injection of imaginary dollars to the price of the whole body of negotiable securities adds large quantities of inflated purchasing power to the markets and creates an active market for business. Many conservative experts are hoping for a recovery of this type in the United States in the near future.

The disadvantage of the stock market inflation as a mechanism of recovery is that the fiat money is created entirely in the hands of the investors who happen to own securities at the moment when they are marked up in price. That is, the money is given exclusively to investors as distinguished from consumers, and is mainly surplus income that will not appear as consumer buying power until it has passed through one of the distributive processes. Naturally there is a strong tendency for investors to use their inflated assets as a means for new investments in new enterprises. The fiat buying power tends to be distributed to the consumer by way of the investment mechanism, with its rapid accumulation of debt and its powerful cyclic reaction. There is, in addition, a secondary process that acts in the same direction. It is a fact in this wicked world that when a hundred billion dollars or so of the root of evil materializes in the hands of the financial leaders of the nation, they are likely to become so powerful and so apparently respectable that they can influence the Government. The next thing that happens is a reduction of the income tax on the upper brackets, so that more money is diverted into the investment, or cyclic, avenue of distribution, and less into the contributory, or non-cyclic, avenue. The reduction of the income tax is the signal for a runaway inflation, leading necessarily to conditions such as those of 1929. By the same token the control of bank credit under such circumstances is impracticable, because those whose activities need to be controlled have grown so powerful that they are themselves in possession of the Treasury and the White House.

Such are the characteristics of the customary "normal" process of recovery, where little if any inflation is done by the Government, practically all the inflating being carried on in Wall Street and the banks. This is technically called "sound money," and there is no way yet discovered by which it can be controlled.

The second type of inflation is the government or "fiat money" type. In this case the Federal Government increases the volume of money or credit, taking the new buying power for its own use. To some slight degree this effect can be obtained by marking up the price of gold, when the Government has most of the gold in its own possession. But the most effective method of federal inflation on a large

scale is the sale of Treasury paper or bonds to the Federal Reserve in return for fiat credit or paper money. The method is sufficiently obscure to avoid scaring the country into a panic, if the job is carefully done at times when the newspapers are occupied with other matters. The Federal Government, having become possessed of this new fiat buying power, can then distribute it to the consumer either by investment or by direct expenditure. The present Public Works Act is largely a program of investment, owing to public ignorance at the time of its passage. Many of the projects impose a debt on business or on the local taxpayer, which is the same thing, and to that extent the program is unsound. The tendency of the Act is to select all those municipalities that are still solvent and make them insolvent. But the Government is not forced to distribute buying power by lending. Federal distribution may be by grant or by direct expenditure, in which case the effect is non-cyclic, no debt is imposed on business, and no tendency to future collapse is set up. The self-liquidation fallacy, a legacy of the Hoover Administration and of the influence of so-called sound finance, is only slowly fading from the public mind. In November the President withdrew four hundred million dollars from the public works and turned them into the Relief Administration, where they can be distributed without the formation of debt. As the public understanding improves the next public works act may perhaps be freed of self-liquidation, so that it may not produce the dangerous after effects that are involved in the existing program.

Another feature of the Federal type of inflation is that there is a fair possibility of control. After the World War, for instance, the heavy Federal inflation that had been used to finance the war was stopped by the appearance of a large Federal budget surplus. The Wall Street inflation, however, was not controlled, because there was no provision for preventing the investment of excessive amounts of surplus income. However, if the high bracket taxes are made sufficiently severe, and if suitable supplementary measures are taken to prevent a rise of security values, then the financial group can be deprived of the opportunity to share in the unearned increment of the recovery. In that case the Government can, if it is sufficiently adroit, deprive its opponents of the sinews of war and prevent a reaction at the polls and the reduction of the income tax. So long as the tax structure can be preserved in a form that prevents excessive distribution of surplus through the investment mechanism and forces most of the surplus to be distributed through non-investment channels, the foundation of stable prosperity can be kept secure. At the same time, so long as the Government can control the disposal of surplus and prevent the creation of inflated buying power except in its own hands, those who would normally operate a runaway inflation of bank credit can be excluded from Federal office, and some semblance of credit control will be within the bounds of possibility.

There is, then, no kind of inflation that can be controlled except a Federal inflation. A sound money, or Wall Street, inflation invariably runs away. But a Federal inflation may be controlled provided the upper bracket taxes, or their equivalent, are made effective. These facts are vital at this time in view of the secular changes that have been taking place in the business cycle itself.

The business cycle nas been tending to become more violent since the War. This fact is not clearly observable on the charts because there is only one major swing. There are some economists who pride themselves on not knowing anything until they have the statistics, that is, until about a year after it happens; but engineers are not bound by any such canon. Among engineers the fact is familiar that there are several factors now acting that tend toward greater instability of business. One is the increasing mechanization of industry, leading to higher overhead costs and lower labor costs. As Mr. Flanders has pointed out, the result is an increased violence of the cycle. Another factor is the increased proportion of durable goods produced by industry. The durable goods market tends to be active in good times and to vanish completely in hard times. Another factor is the financial merger of companies that have no mechanical reason for concentrating their operations. Mr. Crosby Field has been active in calling attention to the dangers of this development. The effect of mergers is to increase the disastrous consequences of wrong judgment, to increase sales cost, and to encourage the growth of stuffed shirts. Moreover, there is a tendency to attempt to control output and prices, which if it is attempted in part of an economic system only, causes the system to become more unstable. For these and related reasons, the downswing of 1929 might have been expected to extend to depths previously unplumbed.

A body vibrating on a spring hanger can move up and down with increasing amplitude so long as the spring does not break on the down swing. In the business cycle the spring was bankruptcy. Bankruptcy was the means by which debt was eliminated from business. By bankruptcy we were washed clean and prepared to rise up and put on new debts as we zoomed upward toward our next tailspin. But if the time ever came when we dared not face the cold bath of bankruptcy, then the business cycle would be ended. Without bankruptcy the spring would be broken, the famous "corner" could not be turned, the old debts could not be washed away, and we could not rise renewed to soar into the blue sky where the cloud castles of finance rejoice the faithful for a moment before they melt away. The only way to keep the joys of the business cycle was to take our medicine each time on the down swing. But with the cycle becoming more and more violent, the time was sure to come when we should not dare to let it go to the bottom of its path. That moment came in 1932, and the R. F. C. was called upon to stop the wave of bankruptcy. That was the end of the strictly self-acting harmonic vibration of the business cycle. From that time on the recovery of business depended on artificial hoisting mechanisms to be supplied by the Government. 1933 is being devoted to the construction of those mechanisms.

The foregoing analysis covers only a few of the many factors of the present situation, but these particular factors are of central importance. Business cannot operate in a system of high productivity unless the surplus income can be continuously distributed to non-producers. The mechanism of distribution must be capable of passing a high percentage of the national income without becoming jammed and without producing an intolerable volume of uncollectable debt. The automatic operation of business in a condition of high productivity tends to a rapid accumulation of debt and increasing instability, calling finally for the permanent intervention of Government as a stabilizing factor. The form of this necessary governmental interference is now being worked out on the anvil of a national crisis.

Two functions will have to be assumed by Government before the operations of business can be permanently stabilized. First and most vital is the function of circulating the medium of exchange. The Government will be called upon by the necessities of the case to act on all stagnant accumulations of unspent money, forcing these masses of stagnant money either into non-self-liquidating public works and services or into contributions for semi-public organized expenditure. By suitable provision for insurance and old age pensions the Government will have to guarantee the basic economic security of all members of the economic system, so that the people can freely spend their incomes without fear. By this means the volume of surplus or unspent income can be cut to a minimum and the problem of its disposal reduced to manageable proportions. The economic system, like the animals in their evolution, has reached a stage of growth where it can no longer feed all its parts by osmosis alone; it is forced to develop a pumping organ to keep its medium of exchange in full circulation. The Federation taxation and spending program, with suitable auxiliary machinery, is that pumping organ without which business cannot adapt itself to its new environment.

The second function that must be assumed by the Federal Government is that of general stabilizer for the economic system. Those industries, such as power and transportation, that require close concentration of control for mechanical efficiency, will naturally drift into the hands of the Government. The extreme instability of large operations when planned with a view to monetary profit, and their devastating effect on business as a whole, will lead to an increasing measure of control by the nation over the operations of concentrated industry. The nation alone can be responsible for the operation of the railroads or of the power system in the interests of stability, regardless of specific monetary return, just as the nation is now responsible for the operation of

the national parks, the roads, and the post office. The course of events will also lead the nation to plan the operation of those forces that tend to the decentralization of industry. Those forces range from high bracket income taxes through planned housing developments to cheap electricity and Federal highways. By decentralization a large volume of the private business of the country will be removed from the area of extreme instability and restored to the possibility of free initiative. As the quantity of necessary detailed planning for industry is reduced within the possible reach of human intelligence, the more unworkable features of the N. R. A. can be quietly relegated to the museum. By some such measures of separation between concentrated and decentralized industry we may escape the necessity of straining the American temperament with too large doses of what they call in Italy the Corporative State. Finally, the nation will be forced by the pressure of events to assume the duty of managing the volume as well as the circulation of the medium of exchange. The present experiments in controlling the gold content of the dollar are only a beginning. Far more vital will be the restriction, through taxation or other devices, of private inflation in the stock market and the banks.

We arrive in this crisis at a new stage of our evolution. The economic system is forced, by drastic changes in its environment, to become a definite organism with a controlled quantity of blood and a heart to pump the blood continuously to all parts of the body. The organism is also forced to develop a definite brain somewhat like the brain in the human body, capable of planning certain kinds of adjustments between the body and the environment, while leaving other adjustments to unconscious or automatic action. The crisis of mutation is a dangerous one, where birth and death hang in the balance. If we can keep our heads, see clearly what is happening, and press forward in the direction of our destiny, we have a good chance to make a successful passage into our new life.

* * *

Whither Engineering?

(Continued from Page 5)

where supposed social experts have apparently failed, it is high time that he seriously consider them. Having developed the necessary technique for almost unlimited production of wealth, he can no longer afford to stand aside while financiers, promoters, and politicians so tragically bungle the problem of its distribution. Primarily, engineering must deal with the technological problems of research, development, design, production, testing, and operation, yet the engineer is becoming more and more interested in finance and is to an increasing extent the directing head of industry and of public works; his success in financial, administrative, and executive posts may be attributed to his talent for dealing with the human phases of industry. He is beginning to interest himself in and to appreciate social and economic trends and is already taking his place among the leaders of our times. Engineers must think more, write more, and talk more on social and economic questions in order to assist in the solution of the major problems confronting humanity.

At the dedication of the Engineering Societies Building in 1907, Dr. Hadley, president of Yale University, said: "Let a man or group of men arise who can add to their technical knowledge a readiness to use that knowledge in the public service, and the people will be ready to put them in charge of affairs and follow their lead." If our profession is to maintain public leadership, we must conscientiously dedicate ourselves to public service and take our rightful places in the affairs of men. This we can do by giving major attention to the following:

Active Interest in Government and Politics

The engineer must actively interest himself in government and politics, realizing that his contributions to society may be lost without stable government. He must work for good government and for obedience to law, and must apply clear thinking and courageous action to public questions. Furthermore, members of our profession must stand for elective public offices and campaign on well-thought-out policies of action, because a democratic state depends upon participation by the ablest of its citizens in political affairs. Perhaps the greatest contribution of engineers, politically, will come through their familiarity with the technological problems which arise in our civilization, since the government of our cities, states, and nation is very largely concerned with engineering matters.

In these days when unrest is too prevalent to be ignored, the greatest need of this or any democratic government is men and women in political office who think logically, conclude honestly, and act courageously. There is a grave danger that in the present popular and indiscriminating demand for economy and for reduced taxes our cultural advance, our educational system, and our social institutions may be seriously crippled. When we realize that the total cost of maintaining activities indispensable to national welfare, such as education, public health, national defense, good roads, police protection, and scientific research is less than that which we spend for amusements, cosmetics, and tobacco, we gain perspective in social values. In many localities education, which is our hope for the future and our main bulwark against unwise changes, is being sacrificed to extravagances in governmental activities. This can be remedied only by insisting upon a higher type of political office holder. Education cannot be postponed or its effectiveness reduced without great penalties in the future. It should also be recognized that the consumer demand of two and a half million Americans is fixed every year, and the schools influence the upper limit of nearly half of these; to close or to impoverish our schools is to dry up our markets for a generation at least, a market which can be developed through schools—more schools—better schools. Industry, jobs, and prosperity depend upon customers and the will to have; the determination to be a customer depends upon education. Similarly, reduction of the essentials for national defense, police protection, public health, and research will prove costly in the days to come. The engineers owe it to themselves and their country to utilize their habits of analytical thought in the solution of public questions. In this they must maintain the same regard for truth and fairness as when they deal with their professional problems.

(To be Continued in February Issue)

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New Monetary System

(Continued from Page 6)

with the greedy capitalist," and it would be hard to predict the final consequences to life, order, and property, in a State with 30% of its population in soul-destroying misery and on the edge of starvation. It will not see the difference between capital in the form of savings from honest work and fictitious capital produced by the fraudulent legerdemain of the stock speculator at the Exchange. In their desperate blind fury, the masses may destroy both and revert to some form of atavistic communism as in Russia. Such seems to be the cycle of progress and decay of civilizations, as recorded in known history.

As an Engineer I have thought about these matters for many years, observing the ups and downs of prices and wages, which influence cost of construction work between wide limits, and I have tried to analyze the causes and find a remedy for these recurring business depressions, which like the epidemics in the past seemed inexplicable. But we laugh now at cholera or yellow fever, because we have learned to control and prevent them and other epidemics scientifically. So we can scientifically control and prevent business epidemics, when the true cause for them is found and the remedy prescribed. Its devasting violence was not foreseen by the shrewdest bankers.

Over ten years ago I had come to certain conclusions regarding money, which I had printed ready for publication, but if published then would no doubt have been denounced as heretical. So they may still be denounced, although they are confirmed by the developments since that time. This thesis is a revised and condensed form of my essay in 1922-23.

I believe that the catastrophe not only in this country, but in all countries suffering from the money crisis, can be ameliorated by rational legislation regarding money and banking, irrespective of treaties, reparations and tariffs, whose sinister consequences cannot be denied, but which would correct themselves the faster if there were plenty of good money. By which I mean money of stable purchasing power, as far as this is humanly possible, and it is certainly possible as shown hereinafter.

In a scientific sense, money can be conceived as consisting of a certain

part or proportion of national wealth, converted into liquid form for the purpose of lubricating trade as a medium of exchange and as working capital. For prosperity there must be an abundance and cheapness of both. There is now a relative severe scarcity and dearness of both. How large this proportion should be is shown further on.

It is a fact no longer questioned by thinking men, that money in civilized countries with stable Governments and modern banks need have no intrinsic or commodity value. Paper money (credit currency) will answer the purpose of money in every respect, provided that it complies with certain conditions, which are here defined and will be discussed further on.

Appendix

A money system can be called scientific only when it can do the following things:—

(1.) Preserve the stable purchasing power of the money unit (dollar) within close limits at all times.

(2). Control and curb automatically excessive speculation in all investments.

(3). Prevent automatically severe business depressions and bankruptcies.

The scientific money system (combined with a banking system) outlined and discussed in my thesis, will fulfill all three conditions in contradistinction to the present so-called gold standard money and banking systems which do not meet them, as proven by the present unparalleled business depression and the closing of several thousand banks in this country.

Gold is only a bait of trade, in the light of common sense a childish device, to impress the credulous. The moment that the much advertised gold redemption (one gold dollar to cover about 25 paper-dollars) is attempted, the money system based on it starts on the toboggan to bankruptcy and can be saved only by Government credit as we witness now all over the country, through the operations of the Reconstruction Finance Corporation.

The foreign exchange relations of money with other countries can be quite properly based on gold, as stated in my thesis. But it should not control the value of domestic money for internal trade, which is at least ten times greater (in the United States) than the foreign trade.

As the cost of production of all kinds of wealth in all countries is in constant flux and always will be, because it depends, aside from the different efficiencies of labor, on many factors that man cannot control (weather, mineral deposits, political conditions, living conditions, etc.), therefore, a money unit based on a commodity (gold or silver) will as already stated, have always a varying purchasing power in different countries and at different times. Under these circumstances a universal international money unit or currency of constant value in all countries will remain a chimera.

The international economic conference now in session at London should consider that it is far simpler and more just to let every country have its own stable money unit for domestic trade, based on the principle of the Scientific Money System, and let the relation of the different money units to each other and to gold, *as a common denominator*, be determined by the exigencies of international trade, and not by arbitrary prescription, through a conference, to be applied also to domestic trade.

It stands to reason, that larger population units (larger States) are more favorable for stability of money value than the same population split up into separate units or nations. In this respect the United States will have a great advantage over the nations in Western Europe. Its dollar will be more stable than the pound, franc, mark, and other money units. It may thus dominate the money market, not only to its own but to the advantage of all nations. But whether it does or not it is of infinitely greater importance that the dollar for domestic trade shall be stable then that the nation as a whole shall be exposed to the vagaries of international trade and exchange.

The most pressing need, however, is now for some simple plan fitted with some modifications into the present United States banking system to overcome the scourge of unemployment. For this the following plan is proposed as a transition to Government money and Government banking, which remains to be organized along the lines indicated in the essay, and is not further attempted herein.

Plan for Curing Unemployment and the Business Depression

It must be recognized, that a return to the hectic prosperity period (1922-1929) which gradually permeated the whole population with debts, is impossible and that there should be a change back to somewhere near the normal and balanced conditions of business, which prevailed for 10 years before 1914; also that the time has come when capital takes less, so that labor may have more.

Allowing for the higher taxes caused by the war, the restoration of the national income may require a transition period of several years. It should begin with a reduction of interest on public and private indebtedness, voluntary or by law, to ameliorate the distress from foreclosures and bankruptcies, and next with the putting the unemployed to work in the field of constructing permanent structures of public benefit, of which there is no end if properly organized, but which private capital will not undertake because the profit from it is either absent or too precarious. Therefore, a speedy and extensive re-employment of labor from that source cannot be expected, particularly so if the revival program should propose immediate higher wages for the sake of greater purchasing power and thus start again the spiral of rising cost of living, even before many millions of willing workers, near starvation, can buy sufficient food.

The fact will be, that many men and women will have to change for a time their vocations and learn new trades, to make any kind of living at all. This will come without much trouble, provided that they can earn enough money at once to pay at least for necessities. The money must be *provided by the Government* speedily and in ample quantity. It should not come from private capital through a Government bond issue with high interest and amortization from taxation.

(1). Let the Federal Government use its own credit, which is higher than any other credit (public or private) and create a revolving capital fund of not exceeding 10,000 Million Dollars in the form of certificates of construction (denominations from 500 to 100,000 dollars) not intended for circulation like currency but suitable for bank deposits from which to pay for all land, labor, and materials going into the creation and maintenance and repairs of actual wealth and *into nothing else.*

(2). These certificates shall represent working capital, available to any employer of labor, at 2% annual interest, which interest shall be paid into the United States Treasury and be applied to the reduction and amortization of the National debt. It means, that the usual method of the Government—exchanging its bonds for private credit and pay interest theron—shall be reversed. That revolving fund will thus not only create new wealth but simultaneously aid in the reduction of national indebtedness.

(3). These two operations can be combined only when the Government becomes its own banker independent of private capital. In this manner the rates of interest and amortization on long term investments can be low, while *profits* as a reward for enterprises and management would not be limited, but being subject to competition may after a time decrease, leaving the amortized capital to be applied to new investment at low interest and thus lead to continuous employment of labor at fair wages and preserving its purchasing power.

(4). These certificates to be used first in payment for all such public federal construction work (including ships for the navy) which at present is paid for from federal taxes. The amount is now from 700 to 800 Million per year. Take this amount out of the budget and substitute the 2% amortization therefor. This will help to reduce taxes and balance the budget for several years, until with returning normal conditions it can be balanced from taxes alone, as it should be, without certificates for these items. It may take a few years to feed the 10,000 Million Dollars into the banks and take the place of present bank credit, which will enable business to gradually return, without a bond issue, to normal business conditions.

(5). Certificates, or bank checks drawn against them, to be a legal tender (at their face value) for all taxes (federal, state, and municipal) and all private and public debts. This will keep them at par with present money, which could be gradually displayed with neo-dollars, having approximately the same purchasing

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power as the gold dollar in 1913-14. Certificates to have no value outside of the United States. This will keep them home and leave the dollar unaffected by foreign exchange money conditions.

(6). Loan these certificates to States and Communities, likewise for construction or repair of their permanent public structures at 2% annual interest, to be paid by them into the United States Treasury from their taxes towards the reduction of national debt until loan is in that way fully repaid.

(7). The certificates would also be used for the purchase of going farms at foreclosure or mortgage sales, and then leasing the farm (preferably to the former owner) at low interest—say 3 to 4 per cent, which shall likewise be used for the reduction of the national debt. When purchase price is thus fully repaid the title to farm to go to the lessee.

(8). These certificates could further be used by the Reconstruction Finance Corporation as loans for, or in payment of construction of self-liquidating and self-supporting projects. If these are undertaken with private capital they must pay higher rates of interest, which increase the cost of operation and slow up amortization in the second place. This is contrary to the aim of national economics, which should be lowest cost of construction and operation and speedy amortization. If the project can afford to pay more than 2%—say 4%—then the loan would be extinguished twice as fast. In addition thereto, the project should be a permanent local taxpayer like other revenue-producing property.

(9.) The earnings of projects in Government ownership can, therefore, be much less, in fact only 1/3 of those with private capital, and yet contribute continually to the reduction of the national debt and the maintaining the national credit on a high level. While projects built with private capital, even when profitable, contribute *directly nothing* to the reduction of the national debt.

(10). The effect of these certificates will be plenty of cheap working capital to pay for labor and material, without an increase of currency, of which the present amount of 40 to 50 dollars per capita in addition to checks is quite sufficient for ordinary transactions.

A further effect will be a reduction of interest rates, to less than 3% *on all capital* through competition with Government credit. This will tend to reduce the crushing burden of interest on the colossal debt of about 203,000 Million (federal, state, communal, and corporate) and aid in its speedy reduction and amortization. Until this is done no true prosperity can come.

(11). Strong objections may be expected from the banks, who would lose certain banking profits from 10,000 Million dollars, if obtained from the sale of Government bonds. Banks would of course be entitled to a small fee to cover administrative expenses for deposited certificates; in addition they could make a profit from loans (against good collateral) at low rates of interest on the deposited certificates, which in practice would take the place of bank credits, as a fund for checks. This will save many millions in interest to borrowers.

(12). Because the certificates would decrease profits to the banks, they may be decried as inflation, like the old green backs, but this would be a misrepresentation. The certificates would not circulate like currency without charge, on the contrary they would be subject to a 2% tax, as stated above, which would go to reduce the national debt and maintain the Government credit at the highest pitch. In practice the tax would take the form of a stamp for ½% to be affixed to the certificate every three months.

(13). The usual method of the Government for raising money in times of need through the sale of Government bonds to private capital and paying high interest thereon from taxation is a very costly device, profitable to capital and bankers, and inherited from a time when Governments were poorly organized for fiscal affairs. Modern Government has unlimited taxing power and its credit when protected by the six conditions discussed in the thesis will always be higher than private or bank credit, even with a veneer of gold. Therefore, it has at least as good a right to charge interest as has private credit.

(14). The above proposed transaction by the Government should pave the way in the present depression for the reorganization and Government ownership of banks and the replacing of the very costly and complicated present bank system in the United States with a simpler and more efficient banking system, based on Government credit with money of stable value and working capital at permanent low rates of interest. Such a banking system is indicated in the discussion of the third condition in my thesis.

(15). That the present gold standard and credit systems of money lend themselves too readily to speculative expansion and dishonest manipulation without much regard to the intrinsic value of merchandise, labor, or property, and to the incurrment of huge state and municipal indebtedness for extravagant and unproductive expenditures, which increase the burden of taxation, should now be clear to the victims of these systems, which robbed them of their savings and their homes. With the Scientific Money System, as described in my thesis and rigidly enforced, this could not happen.

(16). Let the people and specially the growing up youth, which will succeed to Government, adopt the slogan: *"KEEP OUT OF DEBT, IT IS SLAVERY."* It should apply to all public and private indebtedness and be posted on the walls of our schools and colleges and legislative halls. The unsophisticated wage and salary workers should be warned against extravagance and alluring installment payments, collection of which, on merchandise, should be outlawed. Save your money and pay cash for what you buy, it will promote thrift and of itself will prevent and balance overproduction and under-consumption, and thus be one of the most effective antidotes to speculation and business depression, unemployment and want in old age.

* * *

Public Works

(Continued from Page 7)

of the goods and services thus furnished, for which we have small present hope of collecting pay, amounts to much more than enough to finance a public works program equal to our present one over a 12-year period.

Economic Circumstances of Past That Affected Labor—Many of us here can look back far beyond the period of the European War and subsequent inflation and recall other economic circumstances that affected the employment of labor and that enabled us to store our surplus more or less effectively. The development of railroads, the mechanization of industry, the manufacture of motor vehicles, are all examples of what I have in mind. None of these circumstances, however, came as a result of economic planning, and none, it seems to me, was sufficient to afford that measure of stability in employment and security for the individual in his right to earn and live that might have been afforded if private industry had at all times been supplemented by means of an appropriate and continuing national public works policy, always sensitive not only to the needs of labor, but also to the proper aspirations of our people for those services that build up community life.

Now, of course, there isn't any automatic guage by means of which we may measure accurately either the needs of labor or the popular aspirations for public improvements. Unfortunately, the two are not synchronous. When there is plenty of work to occupy all of our labor we generally feel prosperous and set up a demand for public facilities to the point of extravagance. This is illustrated by the billion dollar annual road programs that we put on when employment was plentiful. On the other hand, when our surpluses mount and unemployment spreads in private industry our tendency is to do with less public service and to demand reduction in the expenses of government. We have no plane of reference by means of which public sentiment may orient itself along lines of sound political economy. Public sentiment has met this situation, however, by forcing the delegation of additional discretion to the executive, thus loosing a new rational influence in government.

Purposeful Economic Planning to Guide Future Public Works Programs—Assuming that our national administration, with its broadened powers and purposes, will continue responsive to the dictates of intelligence and devotion to the public weal, I venture to forecast that never again will the public works activity in this country be left wholly dependent upon the fickle sentiment of successive national and state legislative bodies. Public work programs will, of course, continue to be based on legislation, but I think that hereafter we may count on our legislators to accept the guidance of purposeful economic planning

to a much greater extent than has ever been the case heretofore. Such planning, in my judgment, cannot fail to make provision for a continuing national highway program as the major feature of a rational public works policy. There is not a community in the entire country that does not feel the need for additional highway facilities. Small vision is required to see the probable opportunity for carrying on road work with profit to the public for at least a hundred years; and that with due allowance for accelerating the rate of construction as compared to the present.

Transportation Systems Should be Co-ordinated—To my mind there is much significance in those provisions of the Recovery Act and regulations that make city streets and railroad feeders eligible for Federal Aid. The old distinctions were largely artifical. Our transportation systems should be unified and co-ordinated. Streets, roads and railroads should each supplement the service furnished by the other, and it seems a proper function of the Federal Government to aid materially in developing toward that end. The gesture already made opens up an enormous field for public works and, at the same time, simplifies the problem of distributing activity without loss of effectiveness.

The question of how we are to pay for an ever expanding public works program, such as we are discussing, will no doubt impress itself upon the minds of many. My answer to that question is that we will pay for the public works whether we get them or not. I mean by this that we must somehow support our entire population, regardless of the proportion that we have unemployed. If, for example, we can produce merchantable commodities and services sufficient to meet the present demands of the whole population by employing only about three-fourths of our available man power, it is immediately apparent that we can properly and profitably employ the other one-fourth in the production of non-merchantable public improvements.

The Fundamental Question—The fundamental question is: can the average American scale of living be improved and stabilized effectively through a continuing national public works policy rationally adapted at all times to the availability of labor as well as to our common aspirations? If the answer is yes, then there is warrant for the expenditure, and the matter of distributing the burden of cost becomes a problem in taxation, to be handled, of course, with appropriate regard to the underlying purpose of maintaining a stable economic structure. The actual manner of levying and collecting the revenues for public works does not appear to offer a serious problem when we consider the enormous sums that we levied and collected during and immediately following the period of the great war.

Notwithstanding the bonds that were issued by our government, we, as a people, actually paid our way as we went, including the advances made to foreign countries. When it was all over we had as much material wealth as we had before and we didn't owe anything to any other country. There had been changes in the distribution of wealth, of course, and all sorts of changes in relative values, but the average American citizen was better circumstanced economically at the end than he was at the beginning of the period in question. Presumably, therefore, we could have collected all that we spent during that period of heavy expenditure without issuing any bonds and without undue burden on our producers.

Another more or less classic objection to the idea of stabilizing employment by means of public work is based on the often repeated assertion that government cannot function economically. The answer to this objection is the record already established by the Federal Bureau of Public Roads and the state highway departments. If there is any privately owned utility in the United States that can show a comparable record of large scale public service furnished at a low rate of cost, its identity has not been disclosed. Public service investigations have been going on throughout the country and many privately owned utilities have been continuously on the defensive for the last several years. If they could have developed a favorable comparison with the state highway service, it seems to me that they unquestionably would have done so.

Conclusion—In conclusion, may I summarize the thoughts that I want to leave with you. They are:

First—The net measure of our depression losses is idleness. We cannot hope to attain economic stability except by assuring to all of our people the right to work and earn. Intelligent effort must be our reliance for producing and distributing goods and services as well as for balancing budgets.

Second—The most effective means open to democratic government for regulating employment is through public works. A continuing rational public works policy adapted at all times to our community aspirations, as well as to the availability of labor, must be a part of any intelligent plan for controlled economy.

Third—The national and state highway organizations have demonstrated their ability to function honestly and effectively, and the extension of improved highways is needed and demanded everywhere. The highway officials, therefore, have an opportunity and a duty to broaden the guiding vision that inspires them so as to keep it commensurate with the full economic possibilities.

Acknowledgment—The foregoing is an abstract of an address presented Oct. 9 at the Annual Convention of the American Association of State Highway Officials.

* * *

Money Economy

(Continued from Page 8)

shortly there would appear a volume of paper money which would bear no relation to the requirements for currency, with the result that values would begin to multiply in relation to the country's standard of money value. Every head of a State, everyone versed in finance and statecraft knows this and knows the need for international honesty, but if not tied down by something such as the gold backbone of currency, even though it be a varying relation to the managed currency value, those in political control of a state knowingly disregard the need for international honesty, sacrificing the same for personal and national interests.

If Mr. Hitler could issue 100 billion marks of a managed currency without having the gold reserve check upon him and without inviting penalty of depreciated, practically worthless, marks, he would probably do so justifying his actions by the contention that the German people are "God's Chosen Aryans" and therefore entitled to advantage over other people. Mussolini and the others would follow suit, were they not tied in some fashion to a gold reserve.

It is doubtful if a managed currency, without open knowledge of a stipulated gold relationship to it, would be safe even under the benevolent, fairminded guidance of an American President, and its stability, questionable even in a newly created independent political entity as disinterested as our Supreme Court, because that would, in turn, be influenced by American patriotic considerations and requirements, as superior to international honesty.

It is my conviction—that we can never get away from a gold backbone requirement even though it be varied in its relation to our standard of value, such as the dollar, until human nature has advanced to the point that it is safe to entrust the control and the issuing of such an unbacked standard of value to an International Commission of Financiers that will be far removed from the influence of race, of nationality, or of political or diplomatic prejudice. Such a condition would suggest the coming of the millennium.

To state it tersely:—If Nations, including our own, are checked in some wise in the issuance of token currency, by a predetermined fixed proportion relation of the same governments to some definite material actual value standard which cannot be tampered with, will on subterfuge—if pressed—run riot on the issuing of this money.

I do not think that Mr. Gustav Lindenthal's recent per capita population money limitation theory which is referred to elsewhere in this issue would be applicable, because even in a country at a special time and under special conditions, the quantity of currency fluctuates daily, weekly and monthly. As between nations and people — for instance — between the United States and the Island of Java (as an extreme) the per capita population requirement would not be on anything like an equal basis, nor would it necessarily be so between Spain and Germany, or Italy and Finland, and so on.

Currency money is solely a device to make possible the transaction of modern business, especially the business of living. How much it takes for any people at one time is impossible to foresee or guess, and all who are experienced are agreed that this quan-

tity must be elastic to fulfill its functions. Actually, in a modern state, such as our own, it is elastic. People will not keep more money in their possession than they think they need, and the money in their pockets and which is changing hands is money in use or required money. Hoarded money is only the extreme case of money in one's pocket, stocking, or shoe, or wherever it is placed for safeguard, rather than use.

There is a question as to just what is hoarding. It has a direct relation to what is known as the velocity of money. With slow velocity, as in a depression, there is much of what is called hoarding. No more money can be forced out into circulation than people will readily absorb. In such a state as our own, with so many having bank accounts, excesses over requirements are deposited, and in turn the bank, in excess of its requirements for business and reserve, returns the money out of circulation in the United States through the Federal Reserve or its agencies. For this reason, I question very much the practicability of Mr. Lindenthal's fixed per capita currency.

Money itself is not wealth, excepting the commodity value of gold or silver coins or the metal reserve held in safekeping to guarantee the token money. Money gives the possessors only a call on, or the right to goods or wealth, whenever they choose to turn it into such.

I may be mistaken, but one gains the impression that Mr. Lindenthal believes bank deposits remain as currency. Usually only the legal reserve remains as currency. The remainder is invested either as a loan, as a first call on wealth, or as investments through loans in wealth. From the latest figures, the entire indebtedness —public, private, etc.—in the United States is 133 billion, not 201 billion. The outstanding money is less than 6 billion—at its peak it was slightly in excess of 7 billion. Therefore, the 41 billion Mr. Lindenthal contemplates issuing would be far in excess of the requirements and would not be absorbed by the public, which would deposit in its banks the excess and these banks would use the excess over liquid reserve to cut down obligations by returning currency to the Federal Reserve System, and so out of circulation.

The place of bank checks and credit in connection with currency is a very complex one. Undoubtedly, without these devices much more currency would be required. Bank checks are only a medium whereby the velocity of currency is much accelerated. The exchange of the actual currencies being made by bookkeeping transactions involving only a few seconds, where the actual physical exchange might involve several days. The extent to which this modifies the amount of currency required is variable with the flux of business and adds to the elasticity of currency. I know of no device that it would be safe to use as a substitute if Mr. Lindenthal contemplates that this adjunct of currency is to be included in his 41 billion.

I do not agree with Mr. Lindenthal on his reasoning on interest, especially bank earnings on the basis of interest. In normal times, most banks allowed 2% interest on current deposits, and 4% on savings deposits, so that the opportunity for profit was only between this and earnings due to loans, investments, etc. Chargeable against this were the various expenses of administration and profit and loss. It is true that profits may be high in any one short period, but experience demonstrates that in connection with investments or loans over an extended period, capital losses are heavy. Anyone familiar with what is going on today will realize the enormous capital loss of our banking institutions and if averaged up with profits over a long period of years would still—on an average—only show the expected, in spite of the depth of this crisis and the enormous losses involved.

To put the thing more simply:—It has been generally accepted that any investment that yields over 3½%, the excess should be treated as an insurance against rises as the risk becomes greater. I am prepared to state quite definitely that even this 3½% is too great and that few experienced financiers ever fully realize how transient a thing wealth and investment is, how rapidly it is destroyed by changes, wear, tear and obsolescence. Many of our present day difficulties are ascribable to underestimating by the banks, by the public, and by the people in general of the element of return from the investments that represent capital evaporation.

I say all this in answer, not alone to Mr. Lindenthal, but to the general feeling that capital is not entitled to payment for its use. Capital takes great risks in advancing or lending itself. I am quite sure, far greater than it realizes, and the variable percentage of interest paid is frequently not alone affected by demand and availability, but by the risk and the certainty—on an average—of a varying percentage of capital loss.

Those who talk of usury lightly may not realize it, but they are effected by an ancient prejudice based upon a false philosophy. Roman, early church, and mediaeval literature is profuse on this subject.

So long as we retain the "money economy" we must reward industry and initiative, coupled with care and frugality, by permitting the individual who saves beyond what he consumes to retain securely part of the fruits of his effort. That is capital. Then to induce him to lend it to someone else who needs it instead of stopping work himself and consuming or using up his savings, we have to offer something worthwhile, such as usage or interest. In the long run, with, of course, many exceptions, it is just about enough to cover the risk and capital loss incidental to the loan, and very frequently, over a long period of years, not enough for that. In this respect, I think Mr. Lindenthal is influenced, largely unconsciously, by the very tradition of the literature I have spoken of, which, during the centuries, considered it a crime and immoral to charge interest for the use of capital but saw nothing wrong in receiving rents for land or buildings, or in receiving hire for the use of live-stock and chattels. The word "usury" is only a changed form of the word "usage" which was applied to all interest, and the people of the middle ages and the ancients made no distinction in interest or usury.

I quite agree that gold is a commodity. It is a commodity principally on account of its monetary use. If, in the future, it became demonitized, the limited demand for it in the arts would undoubtedly react on the quantity produced per year and on its relative price. For various reasons, its relative value fluctuates, but this rather slowly because the annual production is small as compared to the available supply. A managed currency based upon a gold base could be arranged with a variable value relative to the gold itself so as to obviate such fluctuations.

What Mr. Lindenthal says on page 11 relative to an open gold market has been in effect in England for over two years and has within the last few weeks been in use in the United States.

To repeat what I have said before—if a nation for a long time buys in excess of what it produces as in the case of an individual who spends more than he earns, the nation's finances will collapse the same as will those of individuals. The gold standard or a gold standard under a managed currency, or any other standard under a "money economy" could not prevent this.

I totally disagree with the statement that it is desirable to have the total amount of money in a nation remain unchanged. On the contrary. The very purpose of money and its use in the modern state requires that it shall vary with the need for it, because it is not wealth and only so much of it should be in circulation as is required for the business of life.

As to the stock market gambling—this is a matter so closely interwoven with human nature that I see no possibility of preventing the continuance of such practice. In fact, all business under the "money economy" involves risks, an element of speculation and something of gambling — "Nothing venture, nothing win."

I agree that probably by a managed currency, restricted and safeguarded by a gold reserve or something equally effective, we can preserve the relationship of debts to wealth, or rather to equities—wealth above debt—and perhaps through this make less severe the things called "business depressions" or "panics." I doubt whether we can entirely avoid them if we retain the "money economy" unless we succeed in reforming human nature which will always buy on a rising market in the hope of selling at a profit, and which, in panics, will sell on a falling market when few buyers are available.

Concerning his 4th condition— I am in full agreement with Mr. Lindenthal. "Pay as you go" is the desirable method for governments or individuals. However, there are many factors in an individual's life, such as

the purchase of a home and other things; in a government's affairs, such as public works improvements, hygiene, and various other complex things that have been considered in the past justification for expenditures in excess of receipts—justification for borrowing money.

Interest rates are, of course, again a function of what the money can be secured at, considering the various elements I have mentioned. The people might not buy the bonds at the 2% rate noted.

Relative to the 6th condition—I have already dealt with the so-called hoarding. With a flexible currency, hoarding does not specially harm. It may merely be considered as slowing velocity. An increase in circulation takes care of this.

With respect to the appendix—I cannot help but feel that Mr. Lindenthal, as so many of us, is thinking seriously of the evils of the "money economy" and would like to find some way to correct them. It should be remembered that the "money economy" is deeply rooted in our institutions, since its first invention 2500 years ago. It is closely linked with individualism, freedom, personal liberty, incentive, pride in one's work and, generally, all of the things commonly associated with the civilization of Christianity. It has its shortcomings and has frequently failed us when we needed it most. However, its failure is largely due to the weaknesses of human nature, to selfishness, to stupidity, and to the gambling instinct, the improvement of which weaknesses is a very slow humanizing process.

Perhaps the "money economy" is not a necessary thing in this world. We know now all Karl Marx did not know, because he died in 1883, before progress in archaeological excavations and the deciphering of dead languages made the information available that great stable civilizations existed for centuries without the "money economy." The people living in these ancient times, however, knew no personal freedom, individuality, pride in their work, or reward for initiative, and consequently made little progress in civilization.

We must choose the lesser of two evils and in our groping, ineffectual human way do the best we can with the device we have employed, and that election seemingly is "money economy" and not the pure communal economy which, unbeknown to Karl Marx, was tried and lived under in the ancient world. That ancient pre-Greek world, 26 centuries before the coming of Marx, Engels and Lenin, followed the precept, "Each shall produce within his capacity and receive in accordance with his requirements." For the successful working of this theory we must either, at one sweep, wipe out all recollection of 25 centuries of human impressions as exemplified in our history, our laws, our religions and our system of education or, by artificial eugenic control, breed a new race in which human nature will be different. The disciples of Marx are not averse to such an attempt, if necessary.

Registration of Engineers

(Continued from Page 9)

progress has been recorded in the registration laws. Legislators have come to recognize the fact that Engineering is not an empirical calling, but a learned scientific Profession, and in recognition of that fact we have written into the laws educational requirements for the licensing of Engineers. Both college graduates and non-graduates have to pass written examinations. The man who has not had the advantage of a college education is given an opportunity to show by examination that he has the equivalent technical training. The laws now generally require qualifications of moral character, evidence of completion of academic and professional education, and in addition a number of years of practical experience in engineering work of a character satisfactory to the Board of Examiners. Standards have been progressively raised and it has become increasingly difficult and will ultimately become impossible for the incompetent, the unqualified or the unprincipled to secure a license to practice in the Engineering Profession.

Another important principle that has been recorded through the agency of our registration laws is that of the solidarity of our Profession. We have recorded the principle that Engineering is *one* Profession, although specialties may be many. We do not license the specialist; we license the Engineer. We do not place any limitation upon the branch or speciality in which he may engage; instead we expect the Board of Examiners to make sure, before granting a license, that the man can be trusted not to engage in any specialized work in which he may not be qualified. The same principle has long been established in the medical profession.

Another effective application of our licensing laws has been in the protection of Engineers against discrimination and restriction of fields of practice. Our Profession has taken the position that we do not seek to interfere with the rights of practice of any other profession, but at the same time we have firmly recorded the principle that we will not allow any other profession to restrict the rights of practice of the Engineer. We have had our battles on that issue and the victory has been won. Without our registration laws on the statute books, our cause would have been lost. We would have been subordinated to other professions, our field of practice diminished, and our Profession dismembered.

One problem that is now occupying our attention is that of strengthening, interpreting and applying the registration statutes so as to protect the designation "engineer." The term has been arbitrarily appropriated by many who have no possible claim to recognition as Engineers, and it has furthermore been abused by the most absurd combinations and hyphenations, to a degree that has confused the public and has in many cases degraded the term "engineer." In order to protect the dignity of the Profession and in order to make the enforcement of the registration laws more effective, we are conducting a vigorous campaign of publicity and enforcement to restrict the use of the term "engineer" to those legally entitled to it. There again we are merely following in the footsteps of all the other professions which have undertaken and have succeeded in restricting the use of their professional designations.

Registration places Engineering on a par with Law and Medicine as legally restricted and recognized learned professions. No unlicensed man can practice law or medicine, or call himself a "lawyer" or a "physician," without being subject to arrest and imprisonment. Yet, until Engineers' registration was enacted, there was nothing to prevent any man, however unlettered or untrained, from hanging out his shingle as an "Engineer" and attempting to practice Engineering.

Without registration laws, there is no way to stop the practice of Engineering by the non-engineer, the quack, the incompetent, or the impostor.

Without registration laws, there is no way to preserve to the qualified Engineer his rights of practice.

Without registration laws, there is no way of ousting from the practice of the Profession those who prove incompetent or unworthy.

Without registration laws, there is no way of stopping the misappropriation and abuse of the designation "engineer."

Registration places the force and sanction of the law behind the desire of the Profess to maintain a clearly recognizable line of demarcation between the Engineer and the non-engineer. It places the agencies of the law behind the efforts and aspirations of the Profession to maintain high standards of qualifications and ethical practice.

Engineers' registration is required for the protection of the public. The work of no other profession more truly concerns the safety of life, health and property. To wait until there is a public demand for this legislation would be an indictment of the Profession as falling short of its responsibilities. Registration laws are therefore planned and written by Engineers, enacted through the educational influence of Engineers, and are administered by Engineers.

Protection of the public is the legislative justification, and establishes constitutionality. This benefit has been established. Protection of the Profession, its standing and its standards, is a concomitant benefit. The two benefits are inseparable. The elimination of the unqualified and the unworthy certainly benefits both the public and the Profession.

The other learned professions, such as Law and Medicine, have long had laws in all the States regulating professional admission and practice. Public respect and confidence have grown in proportion to the virility with which those professions have used their registration laws to maintain high standards and to eliminate the untrained and the unethical. Engineers' registration will accomplish the same objectives for our Profession.

Registration legislation is an essential step in our program of securing for the Engineering Profession its rightful place in public recognition and esteem and thereby securing for the individual Engineer more adequate opportunities, recognition and recompense for his high services to society.

* * *

CIVIL WORKS CHIEF TO ASK MORE FUNDS

(Continued from Page 10)

cited the fact that on Jan. 4, the more recent pay day, the amount paid out in wages to civil works employes in this city was $2,024,000, as against $887,454 paid to work relief employes last October.

He expressed the hope that legislation pending in Albany for unification of the city parks would make possible the absorption into the civil works program of the bulk of the 35,000 men still awaiting employment under the New York City quota.

FINDS DELAYS UNAVOIDABLE

Although conceding that there had been much difficulty and some unavoidable delay in setting up and developing the civil works machinery, Mr. Schoellkopf expressed satisfaction with the results accomplished. He said that under the late Travis H. Whitney, the machinery here had been developed to a point where it could function with greater speed and efficiency.

"I do not feel there has been any particular delay in the development of the program," he said. "Whatever delays there have been were inherent in the whole problem."

He felt that the full quota of civil works employes for the State and city would be at work by Feb. 15.

Colonel Walter A. De Lamater, acting civil works administrator for the city, declared the organization here was devoting all its energies to development of the works program 100 per cent by the end of the month.

Mr. Schoellkopf will go to Washington today to discuss with Harry L. Hopkins, Federal Civil Works Administrator, the appointment of a successor to Mr. Whitney, as well as other problems of importance to the entire program.

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New York and New Jersey News and Activities

CIVIL WORKS PROGRAM

(Continued from Page 11)

bringing Christmas cheer to some now unemployed.

It is advisable and will aid, if you can obtain some publicity in the press of your actions thereby informing many not otherwise reached.

I wish to extend the Season's Greetings to you and to the members of your chapter and urge extreme efforts on the part of all to aid in this worthy movement.

Very truly yours,
ARNOLD G. CHAPMAN,
President.

Note: The list of C. W. A. Administrators above referred to may be obtained from your Chapter Secretary.

EXECUTIVE BOARD MEETING

(Continued from Page 11)

tunity for confusion with people who are not licensed and the President asked the Board to give the subject consideration.

Announcement was made that the Oltarsh (test) Case was postponed. This refers to the test of the conflict with the N. Y. City Licensed Surveyors Ordinance. Our attorney has submitted a Brief to the Attorney General on this subject.

The question of endorsement of Society members for civic office was discussed and the view was expressed that this was not advisable and against the best interests of the Society as unfair to members and as meddling directly in politics.

The matter of the presentation of a Play illustrating the work of Engineers as was done at the Stevens Institute Anniversary was mentioned as a means of securing publicity.

The publication AMERICAN ENGINEER was discussed at some length. President Chapman has in hand a method of encouraging advertising through which both the Society and the Publisher would benefit.

It was noted that Nassau Chapter, Bronx Chapter and New York Chapter have recently appropriated sums directly to the publisher as a means of assisting him through the difficult times. The magazine is and has been published at a loss to the publisher for some time past. The view was expressed that the magazine must be continued and perhaps ultimately the Society should see fit to undertake publication itself.

C. W. A. MATTERS

President Chapman outlined his correspondence with Joseph Shaw of Utica, Regional Director for New York, New Jersey, Delaware and Pennsylvania and W. H. Jones, Director of Projects in New York City regarding the importance of engineers in the direction of work and they gave assurance that they appreciated this and that they would call the attention of local administrators to the suggestion that inquiry be made of local county chapters for engineers needs for such work.

Mr. Lamb pointed out the need for advice to the several chapters of the efforts being made in these directions by our President in order to avoid duplication of effort and to eliminate confusion of public authorities as to who was who in our society efforts. Mr. Lamb had been over much the same ground.

Mr. Sheridan said the situation as to C. W. A. matters was serious especially in New York City and the standing of the State Society as representing the engineer was being affected detrimentally. The organization known as the Federation of Architects, Engineers, Chemists, and Technicians recently organized has jumped to the front as being the champion of the engineer and we must take steps immediately to offset this or we shall lose our prestige. Mr. Lamb quoted a letter from Fritz Kaufman, Director of Employment, Dept. of Labor, N. Y. State Employment Bureau in 28th Street giving a list of organizations with whom his office will cooperate in employment matters and the list omits our Society. This tends to put us in a bad light. It will be remembered that the above named "Federation" has also advanced a suggested Code for Technicians. (See American Engineer for October, 1933).

Mr. Ward stated he had been in contact with some representatives of that organization in Kings and believed he had convinced them that their best course was to let our body work out their problems. Too many organizations led to confusion of public authorities.

It was brought out that the C. W. A. does not require that a man be destitute in order to obtain employment as in contrast with the Unemployment Relief requirements which refused aid unless a man was down and out mentally and financially.

CODE OF FAIR COMPETITION
(*Engineers Code*)

Mr. Chapman advised that he was very certain that none of the drafts of the proposed code would be adopted as of January 15, 1934 at Washington.

Mr. Sheridan's motion seconded by Mr. Burke as follows, was carried:

That representatives of the five Metropolitan Chapters, either the presidents or others, be appointed a Committee to immediately wait upon Travis Whitney, C. W. A. Administrator; with Mayor-elect La Guardia, with New York members of the P. W. A. and if necessary with authorities at Washington and call to their attention the aims, purposes and general usefulness of this Society in aiding the smooth working, of both P. W. A. and C. W. A. projects all with the main purpose of getting work for our unemployed engineers and engineering assistants and at a proper wage.

Dr. McKee noted that he expected to have a private conference with people in close contact with Mr. La Guardia at which he hoped to be able to advance the interests of the Society in this direction.

Mr. Sheridan's motion, seconded by Mr. Burke, was carried as follows:

That the Metropolitan Chapter Presidents arrange immediately to organize a meeting for UNEMPLOYED ENGINEERS AND ENGINEERING ASSISTANTS for the purpose of making known to them the aims and activities of the State Society in its efforts to assist in securing employment for them.

Mr. Zurmuhlen noted his observation that the P. W. A. was not employing Licensed Engineers in places where this seemed to be called for.

Mr. Sheridan's motion seconded by Dr. Steinman, was carried as follows:

That the President in behalf of the Society enter a protest at Washington against the apparent contravention and lack of observance of the New York State License Law regarding the practice of Engineering and that copies of said protest be sent to local P. W. A. Administrators.

(Desirable that all possible publicity be had for this protest).

N. Y. City Charter Revision

At Mr. Sheridan's suggestion, the Committee to confer with Messrs. Whitney, La Guardia et al was directed to make it their duty also TO ADVISE MR. LA GUARDIA of our desire to cooperate in the work of formulating a REVISED CHARTER FOR THE CITY OF NEW YORK.

It was the understanding of the meeting that Mr. Sheridan as a Trustee and because of his familiarity with the subject, will be designated as CHAIRMAN of the METROPOLITAN CHAPTER COMMITTEE TO WAIT UPON MESSRS. WHITNEY, LA GUARDIA ET AL.

Code of Fair Competition and Engineer's Code

Continuing on this head Mr. Chapman advised he had wired Washington that the State Society did not approve of the draft of the Code of November 18th as stated in the Preamble inasmuch as the draft had never been reviewed prior to the issuance with this statement embodied.

Washington advised that the Code has not yet been adpoted or approved by the N. R. A.

We have an unofficial draft of the latest edition of the proposed Code dated November 29th, 1933.

Dr. Steinman expressed himself as exceedingly discouraged over the whole code matter. He has lost interest and has little hope of any useful code being promulgated. Mr. Ward stated his belief that the code control method violated the N. R. A. law itself as regards majority rule in its administrative features.

Dr. Steinman moved, Mr. Sheridan seconded and motion carried:

That the NEW YORK STATE SOCIETY draft a Code immediately and present it to the Authorities as representing the views of the Professional Engineers of New York and of New Jersey—N. J. Society to be represented on the committee and a committee be appointed at once to draft such Code.

Mr. Smyth called attention to the apparent lack of time limit during which the code would be in effect; at present it seems to run indefinitely.

Mr. Zurmuhlen suggested that the Chairman of the Legislative Committee be one of the members of the proposed Code Drafting Committee.

Mr. Ward suggested all possible publicity be secured on the professional engineers objections to the codes so far drafted and of the fact that we are drafting one ourselves.

The meeting adjourned at 2:20 P. M.

Respectfully submitted,
ROY C. CRAM,
Acting Secretary.

Licenses Granted

December 18th, 1933

Baker, E. Brown
Utica, N. Y.

*Collett, Everett S.
Whitehall, N. Y.

Coover, William E.
Brooklyn, N. Y.

Cownie, David L.
Buffalo, N. Y.

*Daly, John K.
Port Jefferson, N. Y.

Ellis, Frederic R.
Hyde Park, Mass.

Funder, Matthew
New York City

*Hicks, Charles E.
Mechanicville, N. Y.

Jackson, William G.
Bronx, N. Y.

Jallade, Louis E.
New York City

LeFevre, Solomon
New Paltz, N. Y.

Lichtenstein, Louis
Bronx, N. Y.

*Little, William S.
So. Rochester, N. Y.

Moore, Richard R.
Grantwood, N. J.

Nettleton, Leroy A.
Brooklyn, N. Y.

*Parshall, Lynn G.
Cooperstown, N. Y.

*Rhodes, Keith
Syracuse, N. Y.

Roemer, Charles A.
Troy, N. Y.

Rutherford, Thomas B
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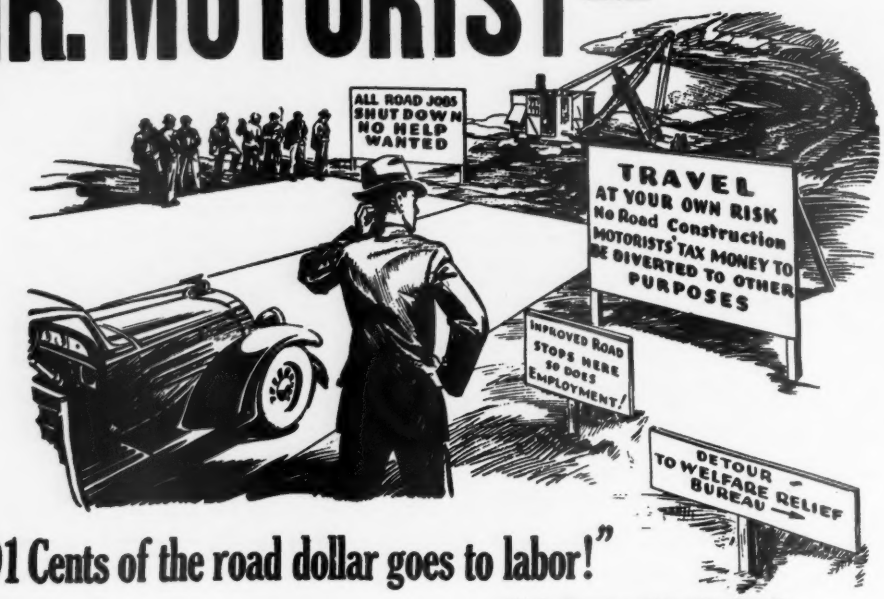
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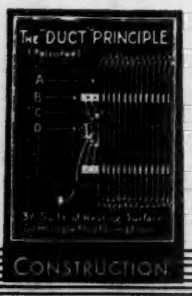

CONSTRUCTION

LEFT: Sketch reveals construction of patented DUCT chassis. When switch (D) is turned to "High" or "Low," copper plates (A) are heated by electric elements (B). The air in "ducts" (C) is heated and rises rapidly.

DUCT
THE
economical
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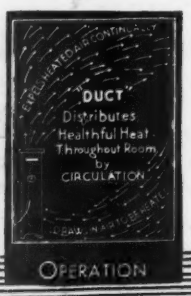

OPERATION